

COMMODORE

November 1989 £2.75

Disk User

FOR C64 AND C128 USERS

WINDOWS
AND
ICONS
MADE EASY



Birthday competition

Programmers Diary Using rasters

Software reviews Disk Dungeons



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SUBSCRIPTION RATES

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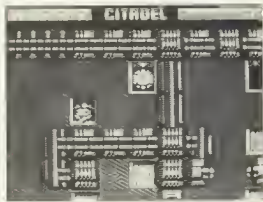
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UPDATE

Computer Charades

Can **Domark** do it again? Do what? Well, turn a board game into a computer game and earn another big wad to wave around the spitzer bars of Putney.

After *Trivial Pursuit* comes *Pictionary*, a game of charades acted out in pictures. Sounds kind of whacky to us!

So, you get this word or phrase, yah, and you sort of draw fab little piccies till your team mates guess what it is. Sounds so groovy to us that we can't wait to get onto our poser phones and slap some dosh down on Domark's doorstep.

Hey, I've got an even better idea. Why don't we nip out to Horn'ds and buy one of those Flo-things and a dictionary. That'll only cost 19 sows and 99 bronzies which is the same as Dom's floppy but we won't have to battle with a wretched computer graphics program.

Beastly Fun

Sega's *Altered Beast* will be unleashed by Activision in October. The game is a metamorphic treat in which the player starts as a brave Roman centurion raised from the dead by the god Zeus to rescue Athena from the clutches of Nelf, the evil Lord of the Underworld (Greek and Roman mythology was never a strong point at Sega).

As the game progresses and the player collects mystical spirit balls, the centurion changes form to become a werewolf, dragon, bear, strongman and a golden wolfman. Each metamorph has a special power to overcome the hordes of Nelf until the final confrontation is reached.

The game features five challenging levels and lots of massive spnte. The disk version is priced at £14.99.

Office Offer

Somewhere out there lies a box containing a card which entitles the owner to claim a £500 Sony SLV401 video recorder from Database. The card in question is the 500,000th Mini Office registration card and it could be in any of the versions, including the C64!

Mini Office is deservedly the best selling business package and has

Video games

How do computer stores know which games to stock? How do they know the good lookers from the naff? One way is to check the *Action Screenplay* video from **Hot Shot Entertainments**.

Now Hot Shot thinks that there may be a market for the video game magazine. To this end the tapes are soon to include features on topics of interest to avid gamers as well as all that's new and due on the market. The idea is to rent this out to anyone who may be interested for £1.50 an issue. Interested? Well pop down and check out your local game supplier or video library and hound them until they put in a regular order.

Paul Gascoigne, resplendent in his Spur's colours, is the star behind the marketing of yet another football game. *Gazza's Super Soccer* brings the same kind of recognition to Tottenham's international player which has previously been afforded to Lineker, Shilton, Beardsley et al (Al who?).

The game's publisher, **Empire Software**, claims that this late fixture in the football games season offers greater tactical control. If that isn't enough to start the 'here we go' chant, then the Boot-o-meter probably will. This wondrous device allows the player to select the strength, height or spin of the ball before boot meets leather. Sounds like a few ideas have been nicked from the snooker genre.

Also featured in the game are static views of the three zones of the pitch rather than the scrolling panorama of many other football games. This, **Empire** believes, helps to maintain maximum control (and it's a whole lot easier to program).

Open season is declared on *Gazza's Super Soccer* in October and the gate money is £14.99.

Gazza's strip



enjoyed a high profile since its launch in October, 1984. It's principal attraction is its low price and high quality, offering a wordprocessor, database, spreadsheet and comms package all in one for just under £15 on the C64/128.

A consignment containing the 500,000 package left the Database warehouse in August so there may still be a chance to find the winning card.

Flaming dragons

If you feel that you're getting attached to the *Dungeons and Dragons* craze, you'll be pleased to hear that SSI's *Dragons of Flame* is due for release in late November.

This is the follow up to *Heroes of the Lance* and the gameplay has been expanded to include Quest and Wilderness mapping levels, a party size of eight to ten characters (some not player controlled), a time limit in which to complete three quests, more monsters and more magic. We raved about the prequel so watch future issues to see what we think about this. At only £14.99, its got a head start already.

Make my day

Cheetah has extended its range of peripherals with a new light gun which, it claims, is unsurpassable in terms of quality and features. The *Defender* gun would be nothing without software so six games have been commissioned from Codemasters to complete the package.

Rain(bird) Dear

As *Rainbird* settles down under the control of Microprose, it's fitting that one of the first games should be called *Epoch*, as the company enters a new era. The take-over doesn't seem to have affected the company's pricing strategy however with the disk version costing £17.99.

Epoch sounds like the old conquer and rule scenario: capture towns, handle the finances and cheat the people but don't get caught. We can't decide if it's *Hammurabi* with conquests on or something more subtle. One thing's sure, if SSI can market the *Dragonlance* games at £14.99, Epoch has to prove it's worth three quid more.

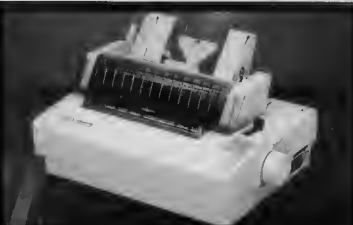
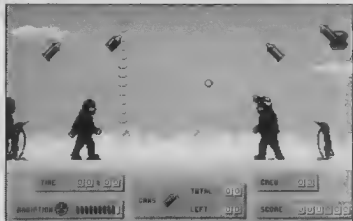
Peace At Last

Warrior's a good word to include in a Microprose game but I never thought I'd see the word 'peace'. With *Rainbow Warrior* - the Greenpeace game on the MicroStyle label, you get them both with this year's buzzword 'green' thrown in for good measure.

This is a game with a serious message about the wreckless abuse of

our environment. Issues involved include the destruction of the ozone layer, nuclear power, radioactive waste and untreated sewage dumping, seal pup culling, and whale hunting.

Full marks to Microprose for producing a game which deals with these controversial matters and for allowing Greenpeace to include a comprehensive and informative manual as part of the package.



Swift reply

With everyone dabbling in high quality 24-pin printers, it's not surprising that Citizen has brought out a low-cost version of its own. The Swift 24 costs a relatively low £389 (excluding VAT) but boasts a high density of features.

The Swift 24 has a pica pitch speed of 160cps and letter quality speed of

53cps, backed up by an 8K buffer which is expandable to 40K. The company claims that at 52dBa this is the quietest 24-pin on the market.

Compatible with Epson LQ, IBM Proprinter and NEC standards, sporting four LQ fonts and with a colour conversion kit for just £38, this definitely sounds worth begging Santa for.

Editors comment



You will no doubt have noticed the dubious looking character in the photograph. You will be pleased to know that this is the man himself, yours truly, Paul Eves - Editor 1 decided that it was time we put a face to the name. A lot of you have seen my programs, quite a few of you have heard my voice, only a minority have actually ever seen me! Seriously though, now that you have met me, how about letting me meet you. Pick up the phone for a chat, drop me a line. Lets get together. I need your programs, your ideas and your comments. Together we can make CDU continue to be the best magazine around for the C64 and C128. (It is STILL the only magazine for the C64 and C128 that includes a disk on it's front cover).

Having got that over with, I would now like to officially say to you all...

Hello and welcome to this special edition of COMMODORE DISK USER. Special for a number of reasons. The first and foremost is that this edition is our 2nd anniversary. CDU is 2 years old. The first edition of the magazine went on sale in October 1987. At the time, it was not known how it would be received by the dedicated C64 and C128 users. I am pleased to say that it has surpassed all expectations.

Due to the popularity of the magazine, the decision to go monthly has now been taken. Therefore, from this issue onwards, your favourite magazine will be available each and every month, with no increase in the purchase price, instead of every two months as it currently is. My thanks go out to all you readers that have made this possible. Well done!

If you look on the front cover, you will see that there is a competition in this issue. Hopefully, we will be running

competitions on a more regular basis in the future. So whats on the disk for your pleasure this month???

For those of you that want to design SPRITES easily without fuss, there is SPRITE EDITOR 1, using windows and icons is simplified by BASIC EXTENSION. For Basic programmers, there is an excellent PROGRAM COMPARE utility. (forgetting what amendments you have made is now a thing of the past). HELP enables you to store all that useful information in the form of screens for you to recall at your leisure. Making full use of your available disk space is made easy with DISKONOMISER. There are three games on this disk. ORSITAL is an unusual arcade style adventure. In WABBIT you are a Rockford type character avoiding the boulders. This months shoot 'em up is an offering called B-RAID. Finally, continuing on from last issues article on using the rasters, there are a few source files and a RASTER DEMO. Once again, there is a distinct lack of a C128 program on this disk. I repeat last months plea... send in those C128 programs.

We do our best to make sure that Commodore Disk User will be compatible with all versions of the C64 and C128 computers. Getting the programs up and running should not present you with any difficulties, simply put your disk in the drive and enter the command.

LOAD "MENU", 8, 1

Once the disk menu has loaded you will be able to start any of the programs simply by pressing the letter that is to the left of the desired program.

It is possible for some programs to alter the computer's memory so that you will not be able to LOAD programs from the menu correctly until you reset the machine. We therefore suggest that you turn your computer off and then on before loading each program.

How to copy CDU files

You are welcome to make as many of your own copies of Commodore Disk User programs as you want, as long as you do not pass them on to other people, or worse, sell them for profit.

For people who want to make legitimate copies, we have provided a

simple machine-code file copier. To use it, simply select the item FILE COPIER from the main menu. The copier works with a single drive, and is controlled by means of the function keys as follows:

F1: Copy file - the program will prompt you for a filename

F3: Resave the memory buffer - you may get an error on a save (perhaps you left the drive door open). Use this to try again. Or if you want to make multiple copies to other disks.

F5: Disk commands - allows you to enter any regular C64 disk command.

F7: displays the disk directory

F2: Exits the program and returns you to basic.

Disk Failure

If for any reason the disk with your copy of CDU will not work on your system then please carefully re-read the operating instructions in the magazine. If you still experience problems then:

1) If you are a subscriber, return it to:

INFONET LTD
5, River Park Estate
Berkhamsted
HERTS. HP4 1HL
Tel: 0442-876661

2) If you bought it from a newsagents, then return it to:

Protoscan
Burrell Road
St. Ives
Cambs P17 4LE
Tel: 0480-495520

Within eight weeks of publication date disks are replace free.

After eight weeks a replacement disk can be supplied from DDS for a service charge of +1.00. Return the faulty disk with a cheque or postal order made out to DDS and clearly state the issue of CDU that you require. No documentation will be provided.

Please use appropriate packaging, cardboard stiffener at least, when returning disk. Do not send back your magazine - only the disk please.

NOTE: Do not send your disks back to the above if its a program that does not appear to work. Only if the DISK is faulty. Program faults should be sent to the editorial office marked FAQ bugfinders. Thank you.

XYBOTS

A vast underground complex has been overcome by the very mean and nasty Mr Xybot, and so being a pair of awfully nice chaps you decide it's not really proper for it to stay that way. And get together to kick some aliens.

The city is made up of convenient mazes with doors and transporters within them. The architect had probably been a Gauntlet fan. Lots of bored little aliens rattle round these complexes, shooting at anything that isn't battery powered and hasn't got two antenna on top of its bonce. And that's basically the scenario for this game!

While the two heroes play the game, they are shown on the screen at once, one on each side of the split down the middle, with a map and information panels situated along the top of the screen. You control your hero by pushing the joystick forward to move forward, and left and right to shuffle left and right. Holding down fire and turning, spins you around whilst fire alone LETS THE ALIENS HAVE IT!

In the mazes the heroes can pick up coins which can be used at the end of the level to buy lives, weapons, armour, information etc. You can also give the coins to your partner if you are very generous, stupid or both. At the end of every few levels you get a One on One Duel with the MASTER XYBOT (Dum Dum!! If you defeat him you get to go to the next level, if you don't you get thrown back a few levels and chew a chunk out of your TV (It's Soooooo annoying!). As you play the game you come across level warps, cannons to give the aliens quicker grief and a Zapper which freezes the aliens long enough for you to sneeze or take a couple of shots at them. I prefer to just run like crazy while they are in this state. Much easier, and very funny for your poor partner behind you who has

to deal with them!

The graphics in the game are very basic in colour but quite good in definition, but little else could have been done considering the type of perspective used in the mazes (3D).

Gameplay is fun, but only really in two player mode. The only serious complaint I have with it is that it runs too slow. Much too slow for my liking, and proved quite annoying at times.

Overall, a good game that hasn't suffered badly from its conversion. It has a lot of atmosphere when running round in two player mode trying not to shoot each other in the back, and

it has proved quite good fun for friends to play to pass some time.

At a Glance

Title: Xybots

Suppliers: Domark.

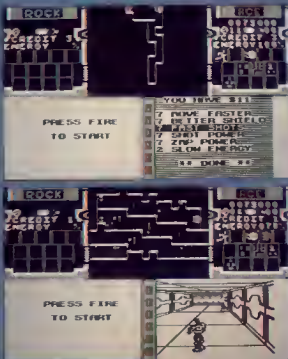
Price: £12.99 Disk, £9.99 Tape.

Graphics: Plain in colour, but well defined.

Sound: Hmm... Bang Pow again.

Playability: Much too slow at times.

Addictiveness: In two player mode VERY!



Rick Dangerous

You do not have to be a latter day Einstein in order to work out who the hero of this **Firebird** game is supposed to be. Anyone still in the dark though should ponder these two clues. His first name is an American State and his second is about as common as Smith.

Rick Dangerous is an explorer, and part time stamp collector, although I must confess, I have yet to come across the significance of this is the game so far. Hot on the trail of a long lost tribe in the South American jungle, Rick's plane crashes through lack of fuel. Coincidentally, he comes down right in the midst of the people he is searching for.

Entering the Aztec temple, Rick soon realises that he is in for a tough time ahead. That is if he actually manages to get ahead as he is in imminent danger of being crushed by a huge boulder rolling towards him.

Should he avoid that little trap, and he is then faced with a series of angry natives, giant snakes, vampire bats and a whole series of pits filled with cruel spikes. To protect himself, Rick has a revolver although he only has a few bullets. A stick can be used for jabbing things in the vain hope that it will push them out of the way.

Finally, there are the sticks of dynamite, used for blasting your way through assorted obstructions. The only problem here is getting out of the way fast enough so that you don't get caught in the blast.

As you move through the cave system, you are always likely to trigger off some other trap - a few arrows or spears aimed at your head perhaps. Unfortunately, it is often the act of shooting a baddy that triggers them so use your ammunition carefully. There are various treasures and extra supplies to be picked up along the way. Should you complete the first mission, then there are three others for you to attempt including an Egyptian tomb.

Rick Dangerous is a fun, unpretentious variant on the ladders and platform theme. The main problem is that the game soon becomes very repetitive as there is only really one way through the temple (there are a few

minor variations but nothing significant). Once you have learnt the route - which is often a matter of trial and error, as you frequently have to throw yourself off a platform into the unknown - the game does become somewhat boring. Once you have mastered a situation, you should be able to get past it every time.

At a Glance

Title: Rick Dangerous

Supplier: Firebird

Price: £14.99

Graphics: Simple, blocky but effective

Sound: A few jolly tunes and sound effects

Gameplay: Easy controls

Addictiveness: Not as much as it could have been



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Time Scanner

Oh what a disappointment! I love pinball games but this conversion, by **Activision**, of the arcade original just isn't up to much at all.

You are actually getting four pinball games for your money with each table being spread over two screens - a top and lower half. Unlike the original where you can move freely between the first three tables, here you have to complete each one in turn before you are allowed a crack at the final screen which includes a mini breakout scenario.

There is the usual assortment of bumpers, spinners and targets to be hit. In addition, each screen features a special task that has to be accomplished before you can progress to the next table. For example, each time the ball travels up a transparent 'volcano' lane, one letter of the word volcano lights up. Complete the word and the volcano erupts. Similar ideas are used on the pyramid and ruins stages.

The tables themselves play reasonably well, although the lower halves are rather boring. The problems come with the actual physics of the game. To start with, the ball travels extremely slowly and if you think that is bad, wait until you have three balls in play simultaneously - you can see each separate movement stepping through in slow motion. So to even things up, flipper response is also slow. This means that you have to anticipate shots.

The nudge table feature is hysterical - the entire table is redrawn, offset by about a centimetre in the direction shoved. It is not possible to tilt the game. I did however manage to get the ball stuck on top of a flipper which required resetting the game.

You have five games to complete all four tables. This is fine in theory but totally ruins the gameplay. The first time that I played, I started a game with only one brick to hit in the final screen. I hit the target first shot and a dreadful final screen informed me that I was the champ before starting all over again. This, combined with the variability in

the tables means that scoring is very uneven between games. My scores within the same set of five credits have ranged between 60,000 and 1.5 million. Surely, it should have been possible to always start the game from the beginning but allow extra balls and free games to increase the playing time.

To sum up then, a pretty poor effort! Anyone looking for a good pinball game should search out a copy of a very old game - David's Midnight Magic. Simple to play, very realistic and highly addictive, it has the advantage

of allowing up to four players to compete together.

At A Glance

Title: Time Scanner
Supplier: Activision
Price: £14.99
Graphics: Lacking in definition
Sound: Not memorable
Playability: Very poor
Addictiveness: Yawn, yawn!





Readers Mailbag

A selection of some of the many hundreds of letters received in the editorial office, from you, the readers

Dear CDU

The C64 has many useful pokes laying in its memory. I present 14 of these pokes for your readers to share. Some of these have appeared many times before in other books and magazines. I have listed the pokes first, followed by an explanation of each.

- | | |
|-----------------|-----------------|
| 1) poke788,80 | 2) poke788,52 |
| 3) poke774,0 | 4) poke650,128 |
| 5) poke773,0 | 6) poke778,55 |
| 7) poke769,164 | 8) poke769,227 |
| 9) poke646,C | 10) poke788,93 |
| 11) poke2048,13 | 12) poke808,234 |
| 13) poke808,235 | 14) poke774,248 |
| | poke775,252 |

- 1) When entered, it will allow you to draw lines with the cursor keys.
- 2) Disables the RUN/STOP key
- 3) This produces only the line numbers of any basic program listed out.
- 4) Enables all key presses to repeat
- 5) Disables the LIST command.
- 6) Quickens the prompt messages.
- 7) Disables the prompt messages.
- 8) Re-enables the prompt messages.
- 9) Alters cursor colour to value of C
- 10) Makes cursor disappear, but you can still type on the keyboard. Once RETURN is pressed, the machine will lock-up
- 11) Disables the RUN command
- 12) Disables the RUN/STOP RESTORE keys
- 13) The reverse of 12
- 14) Resets the computer on LISTing

I hope that these pokes are of some benefit to your readers

Nick Van Heeswyk, Australia

Dear Nick

Thanks for taking the time to part with some of your knowledge. No matter how often things get into print, there is always someone that hasn't seen it.

Dear CDU

As you are no doubt aware from the many reviews of GEOS that have appeared, not only in your magazines, but many others, this product is a very popular package indeed. As a longterm devotee, I have noticed that there appears to be very little help, aid, or assistance for registered users in the UK. I have therefore written to Berkeley Softworks, with the intention of forming a UK GEOS USERS GROUP.

Obviously to get something like this off the ground we will need to attract interested parties, and only if we attract a good number would such a venture be worthwhile. I would therefore be grateful if you would publish this letter and the address so that I can gauge the level of interest. May I stress though that this is not a money making scheme and will cost enquirers only the price of a SAE. In brief the aims of the UG will be to:

- 1) Give assistance to registered users.
- 2) Act as a unified voice when dealing with Berkeley Softworks the main

LETTERS

UK distributors.

- 3) Gain better support for UK users
- 4) Any other beneficial business.

I thank you in advance for any help you may give me

J.T. Bourne, 15 Lanmoor Estate,
Lanner, Redruth, Cornwall, TR16
6HN.

Dear JT

Thank you for your letter and your concern over this excellent package. We wish you every success with your venture.

Dear CDU

I feel that I must put pen to paper for the first time in my life and write with regards to CDU. I have been purchasing the magazine since issue number two (Jan/Feb 87), any chance of issue 1777? I must admit, at first I was a little sceptical. A magazine AND a disk for only \$2.75 (originally £2.50). I thought, here we go, another gimmick to gain readership which will deteriorate as soon as sufficient copies are sold. I am pleased to see that my initial fears were unjustified. The magazine has, in my opinion, gone from strength to strength. The quality of the software that is included on the disk is exceptional, you seem to have the knack of managing to cater for all tastes. There are top-notch utilities mixed with high quality arcade style games. All in all, this has got to be the best C64 magazine on the market. Keep it up.

P. Ellis-Martin, Brighton

Dear Peter

Thank you for your very kind comments about the magazine. I also feel that it is the best on the market that caters for the C64. I have always strived to bring the best for our readers. As you will see by the present issue, there are one or two small changes which will hopefully make the magazine even more attractive.

Dear CDU

Firstly, a big congratulations to whoever is the author of the demo program on the very first CDU (Nov/Dec '87) named 'Circlesque'. It all started when I had a work experience

course for the week commencing 17 July 1989. I casually mentioned that I had some good music and graphics demos on the disk. One of the staff asked me to bring it in to show them and so I made a copy of it for safety reasons and brought it in. The staff were not to be disappointed. The manager of the shop liked the demo so much that he asked me if he could make a copy for the shops purposes. The demo was kept on the computer and admired by every customer that came in that day.

Secondly, and this is the point, it would be nice to see more demo's of this sort. I think that the interest would warrant such a move.

Michael Pitches, Plymouth

Dear Mike

Thanks for the kind words with regards to the 'Circlesque' demo. As you will see from this issue, it is our intention to provide our readers with a few demos from time to time.

Dear CDU

I feel it necessary to inform Mr Fergal Moane, author of the excellent 'Vidibasic' published in the July/Aug '89 issue, that there is a simple way to eliminate the so called "weird colour effects" created by displaying sprites in the upper and lower borders without having to severely restrict the user by having the screen constantly set to black. The effect does exploit a VIC chip bug, but the aforementioned effects are created by the contents of location 16383 in memory (\$3FFF). A simple command will cause the black lines that usually appear in the border to disappear. This being POKE 16383,0. If the user has a knowledge of machine language then I believe that this substitution for setting a black screen during the interrupt will provide greater flexibility in the user's programs. I believe that this change should be pointed out to your readers so that if they wish, they can use varying background colours without having to worry about vertical black lines appearing in the border.

However, an interesting effect can be created using the lines and I would appreciate you not only making my

original point apparent in the next issue of CDU, but also showing this one-liner. Thank you in anticipation.
FORT=0T0100: A=0 5: FORL =0T07:
A=A*2: POKE 16383,A, NEXTLT
Jason Finch, Warwickshire

Dear Jason

Thanks for pointing these things out to us, I sent a copy of your letter to Fergal and re-printed here is his reply.

Dear CDU

May I first say that your time and effort in sending me the letter regarding 'Vidibasic' from Mr Jason Finch is most appreciated. Could I possibly ask you to include the following set of pokes in your reply to Jason's letter. These rectify the fault that he pointed out in his letter and I believe would be complementary to the letter in your mailbag section. Perhaps you could suggest their inclusion in the loader program which accompanies Vidibasic. POKE37972,255, POKE37972,63, POKE38001,255, POKE38002,63

Fergal Moane, Belfast

Dear Fergal

Thanks to you also for pointing out the necessary alterations needed. This is just what is needed, inter-reader participation. Thanks again to all concerned



Paul Eves - Editor CDU
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U J E E T O S K S R P O R W S N S T K S I R L Y
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S G P K Y W S O C S L S Q Y K E C S C E R U A W N
F W E R A T E O G Z I S H I A E X S T R L U I O Y
S Y H J A Q M S N R I T A E O T A N I E M N O R N
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W U S E U E O C U F J A E T L X U H D V U Z W J
G J M T K Q Z H P T W A N S J F E C U N C B X N
B U E C A X J K N G R T T U I M S Q E C I P J B X N
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Award Maker

In a frenzy of self-congratulation, Tony Heatherington makes himself an award using this wacky new program from Amena [of course].

Touchline:

Title: Award Maker Plus
Supplier: Baudville [F55 L], 18, High Street,
Penshore, Works, WR10 1BG
Tel: 0386 553153
Price: £24.95

In any awards ceremony there are more losers than winners, so instead of being magnanimous in defeat, you can get ahead by giving yourself, your family, friends and enemies as many awards as your printer can handle. Yes, once again ace importers F.S.S.L. have shown that games aren't the only way to have fun with the latest in productivity software.

In essence, Award maker is to certificates what Print Shop is to greeting cards - the program contains 286 different basic award styles into which you can add the winner's home, and a few lines explaining exactly what they've done to deserve it.

The graphics files to create the awards occupy three sides of the two disks, and the fourth contains the menu driven program. The package is completed by an instruction manual [that only needs one reading before award creation becomes second nature], an Award Style Catalogue that's essential for selecting award styles and fonts, and a sheet of gold stick on seals to add that finishing touch.

The Award catalogue provides the program's security - the disks are unprotected, so you can make back up copies in case anything goes wrong, though this is unlikely, as creating an award is far easier than earning one.

Obviously, the first step is to choose the award style, which isn't that easy as the choice is extensive. They range in complexity from the Dvot King award for bad golfers (which comes complete with predefined headline and graphic leaving you to fill in the fine detail), to the other extreme - blank

diplomas and Certificates that leave you to do the rest.

As a first attempt I decided that my office would be brightened up by a TGIF (Thank God It's Friday) award, so I selected number 213 at the on screen prompt and then had to look up which disk this was held on. This took some time, but I suppose the program authors have to protect their

work in some way.

The next stage is to choose whether the title will be in Old English, Script Italic, Book Serif or Modern fonts - a limited but adequate selection. Then you choose from a selection of ten borders (or opt for none at all), and then type in any blank lines, detailing who has won the award and why and adding suitable signatures and dates.

Editor Control Summary

Joystick (directions)
Joystick (fire)
Lettered key (A to Z)
(at)
INST-DEL
Backarrow
Ctrl
Left shift
= (equals)
F1
F3
F5
F7
Return

Moves cursor
Lays block
Sets block for cursor to lay
Sets cursor to delete
Displays a plan of the blocks
Returns to 'demo' mode
Enters 'media-transfer' mode
Tests proposed animation
Sets Microdot's start
Sets style to blocks (one)
Sets style to waves
Sets style to spheres
Sets style to blocks (two)
Changes purpose of numbers *

* If 'S' then numbers edit relevant
sprites
If 'C' then:

- 1 Changes static colour
- 2 Changes rubber colour
- 3 Changes block (one) colour
- 4 Changes wave colour
- 5 Changes sphere colour
- 6 Changes block (two) colour

Sprite mode

Joystick (directions)
Fire, or Return
T
C
A
S
D
W
+ and - (plus and minus)
Left shift
Backarrow

Positions sprites
Fixes sprite
Adjusts type
Adjusts colour
Adjusts animation speed
Adjusts movement speed
Adjusts starting direction
Wipes selected sprite
Adjusts sprite area
Tests proposed animation
Returns to 'demo' mode

With the award complete, you can print it out on a variety of printers including most Epsoms, the CBM MPS1200 and some colour printers, including the Okimate 20. If you own the latter, you can add a bit of style by replacing the normal black border with one in Kelly green, lavender, plum or slate blue.

The printer selection may prove the stumbling block for some users, so it's best to check the full list on the back of the box or with F.S.S.L. before you buy - it's pointless if you can't print your awards. If your printer isn't supported, then the solution lies in another F.S.S.L. import called Certificate

Maker, which is almost identical except you will have to do without the gold seals.

The attraction of the program is the range of certificates you can create, and we've included as many examples as possible on these pages to give you some idea, but my favourites (probably because I know people who deserve them) include Murphy's Law for Cars, Citation For Parking Like a Beached Whale, Caught Between a Rock and a Hard Spot and the Writing Award (for mentions of the M25 beyond the call of duty).

If you get bored with the selections, you can improve the variety a little by

importing Print Shop graphics to be used only as a repeating border, and through the four hi-res picture awards that allow the inclusion of a saved hi-res picture.

Finally, you can create and edit a name list containing up to 48 names, so you can award a whole team with the same design and the program will print out personalised certificates. For example, you could commend the entire Scunthorpe United supporters' club with only a few key presses.

It certainly has been fun creating awards and thanking up people who deserve them. Maybe someday I'll have the nerve to give them to the winners.

Spelling Award

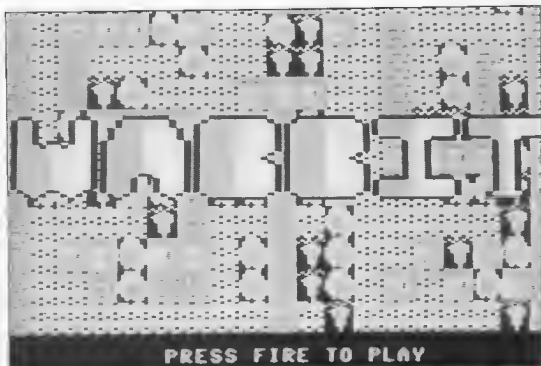


Ony Eterington

For missing out all those T's and H's
and then blaming it on his printer!

March 1989

Commodore Disk User



PRESS FIRE TO PLAY

There you were, minding your own business when suddenly, out of the blue, you get clobbered by this huge boulder. When you come round, your winter stock of carrots have been nicked. What are you going to do? Without an adequate supply of winter food you will surely perish. There is only one thing for it. Put on your best running shoes, and travel the world in search of your best loved food. Carrots!

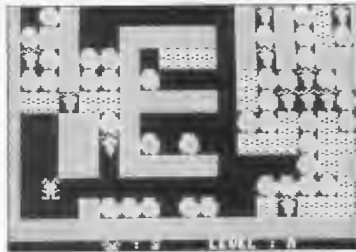
Unfortunately, nothing comes easy in this world. You are going to have to fight for them. Not in the usual way of blasting everything that moves. No sir! Your only chance of survival is by being the most agile and nimble Rabbit around.

The phantom carrot thieves have placed all your winter stock in very precarious places. [Each carrot being protected by a rather large and heavy boulder].

As if that wasn't bad enough. You have to travel around a vast empire of caves that are not known to you. If you are sure you want to go on, insert your joystick into port 2 and let battle commence.

Whats up Doc? All you need to do is collect a few measley carrots

By M. Ware





Basic Extension

Hires, Windows and Sprite pointers made simple with this easy to use extension to the resident Basic

By Steve Carrie

EXTENSION

This program is an extension to the 64's resident Basic 2 interpreter. It provides a number of new features to allow control of windows and also includes a number of useful programming structures and programming utilities.

The program occupies nearly 12K of memory in two blocks; \$B400 to \$9FFF and \$C000 to \$CFFF. This means that there will be 8K less memory available for Basic programs when the extension is running.

When the extension is first activated, not much seems to happen, no fancy screens, no banners proclaiming the best thing since sliced silicon; only the 64 powerup message with a reduced Bytes Free total. Along with a few general purpose programming commands and functions, the extension provides windowing facilities and pointer control from a choice of mouse or joystick.

The system uses mainly the bit-map screen. If you want to use windows and the pointer you have to switch the system to the bitmap screen. The normal text screen is still available and since a number of useful Basic programming commands are provided, you may still find the program useful even if you never use the window facilities.

What is a window?

In the context of this system, a window is simply a rectangular area of the computer screen. When a window is

'opened' on the screen, the existing information in this area is stored and a new block of information is written. As far as a program is concerned, this rectangle is the limit of its screen, i.e. information outside this area is not disturbed by any activity inside the window. When the window is 'closed', the original information is placed back on the screen as if nothing had happened. You can have more than one window open on the screen at once. In fact, the background screen is itself treated as a window, except that it is always open and can never be closed. It can however be changed in terms of its size and position.

This main screen is known as the DEFAULT window. Other windows are known as DYNAMIC windows; dynamic in the sense that they can be changed during the execution of a program. In general, dynamic windows are defined BEFORE they are used. For each window there is a corresponding block of memory in which the displaced screen data is stored while the window is open. When closed, the memory block is used to store the information which was in the window while it was open. Obviously if it has never been open before, there will be no useful data in there! This information may be re-loaded when the window is opened again.

An interrupt-controlled pointer facility is also provided. A sprite is used for this and you may define which sprite is to be used for this purpose. You can

check the pointer's position by a number of methods. Since a sprite is a rectangular block, you may define the centre or one of the corners as the reference point, i.e. the 'active position'. The shape (pattern) for the pointer may also be defined and there are two supplied patterns to start you off.

I have included a demo program which makes use of most of the new facilities. Since the system allows you to have files of character sets, I thought a useful demo program would be a program to define characters using a mouse or joystick. It's fairly basic as character design programs go, but it does show how you can use the new facilities.

One or two things you may need to know when using this program. Certain Basic 2 commands have been changed to allow better facilities to be provided. These commands are IF, GOTO, GOSUB and ON.

When you are using the system in screen mode 1 (the bitmap screen), you can't use the 64's screen editor to change program lines, so you should change to the text screen to do this. As you are probably aware, you can use control codes in programs to change colours, character sets, etc. When using this system in screen mode 1 a different screen I/O system is in effect which provides a number of extra facilities. For example, on the normal text screen you can change the colour of the characters. On the bitmap screen you can also change the background

colour by preceding the colour control code with a CHR\$(1) or a CONTROL-A keystroke. Also, the two character sets may be used onscreen at the same time since a CHR\$(14) only changes the way in which the output routine gets its character information. But be warned that SHIFT-COMMODORE won't work in screen mode 1. Most of the normal control CHR\$(codes will work on the bitmap screen.

Demo character design program

Before you use the demo, you can set the variables P and D to what you require. Variable P is the port number (1 or 2). Variable D is the device to be used to control the pointer, 0=1351 mouse, 1=joystick. The default setting is for mouse operation.

NOTE:- To change the default settings of the demo program, you MUST load it from outside of the menu. Once loaded you can alter the above variables as required and re-save the program. (The demo is called 'Design demo' on the disk directory).

When the program is run, the screen will clear and after a short delay the pointer will appear and also a header with DESIGN and SYSTEM options. Simply move the pointer over the header options and a pull-down menu will appear. Click on the desired option to select it.

The SYSTEM option has one sub-option which will return to basic after confirmation. The DESIGN option also has one sub-option which, when chosen, will open the design grid window and change the header to OPTIONS and CHARACTER.

If you move the pointer to the grid and click the button, the square below it will toggle on or off and the character display to the right of CHAR will update. This table also shows the ASCII code, character set and reverse video attributes. OPTIONS allows you to load or save a character file, and also to exit. The character file may be loaded later using a CHAR LOAD command. It may be a good idea to save a character file before starting the program. This can be done as follows:

```
SCREEN 1,CLR
```

```
CHAR MODE 1,CLR
```

```
CHAR SAVE "file" [,8 for disk]
```

You can then load this file, change any characters you want and then save it to another file for later use. There are 6 sub-options in the Character menu:

SELECT - Select character to be edited

FLIP - Invert character

REVERSE - Reverse video display

CLEAR - Clear the character

COLOUR - Change char display colour

UPDATE - Update char data to memory

The colour option displays a window containing colour blocks. You should point and click on either FOREGROUND or BACKGROUND and then on a colour block. Click on OK when you've finished.

It's a pretty basic character editor but it should hopefully show you what can be done with the extension system.

Thanks must go to Rod Craig in Stonehaven who came to the rescue with disk drive spares when my 1541 decided to have a head crash. This episode goes to prove that a 1551 drive mechanism is much the same as a 1541...

Thanks also to Nicola who still thinks that the Gorf spnte would look better with arms!! (check out the demo.)

Basic command reference

SCREEN mode [,CLR]

Set the screen mode

SCREEN sets the screen operating mode. Windows may only be used in screen mode 1 which is the bitmap screen. Mode 0 is the normal 64 text mode screen. The CLR option may be used when switching to mode 1 and will clear and reset the windowing system. All windows will be closed and cleared. Therefore, you should use CLR when switching to mode 1 for the first time. Thereafter, you may switch between modes 0 and 1 freely. The contents of the screen, windows, etc are preserved when switching from mode 1 to 0.

In screen mode 1, you cannot use the 64 screen editor to edit program text. This is because the two modes use different input and output systems. You should always switch to mode 0

to edit your Basic programs.

CLW

Clear current window

Clears the currently selected window out to the current 'clear' character as specified by the BASECHAR command. The current draw mode (see MODE) has no effect on this command. Note that the values of the foreground and background-colours will be used.

WINDOW / windownumber > OPERATION >

Perform a window manipulation operation

Performs a window-based operation. The general format is as shown above where <windownumber > may be 0 for an operation on the default screen or 1-16 for an operation on a dynamic window. The operation may be one of the following:

DEF - Define the size, etc of window

CLR - Clear window definition

OPEN - Open a window on screen

CLOSE - Close a window from screen

SELECT - Change current window

Windows are defined in a 256 byte table located at memory address \$CF00. Each entry is 16 bytes long and thus you may define up to 16 windows at any one time. The actual memory area used for storing background information displayed by an open window and saved data from a closing window is a 12K or 8K block situated under the Kernel ROM and I/O Devices. The actual size of the memory block is dependant on whether or not RAM character mode is in effect. CHAR MODE 1 [RAMCHAR mode] requires 4K of RAM under the I/O devices and thus if it is effected, window memory is reduced to 8K. Memory is required for both bitmap information and colour data. Memory is allocated when the window is defined. The size of the block required is calculated as follows:

blksize = (depth*length*8) + (length*depth)

You can check the amount of memory left by using the WHEM(O) function. The operations listed above are detailed below.

Defining

WINDOW 0 DEF <length>, <depth>, <xpos>, <ypos> Format 1

WINDOW n DEF <length>, <depth>, <colour> Format 2

The size and position of the default window (i.e. the main screen) are defined using Format 1. The maximum size of any window is length 40 and depth 25. When positioning a window, you must ensure that no part of it extends beyond the screen limits otherwise a **WINDOW PARAMETER RANGE** error will result. The colour value is a number between 0 and 255 inclusive, calculated as $16 \times \text{foreground} + \text{background}$, the colour codes being from 0-15.

Format 2 is used to define parameters for a dynamic window (n=1-6). Only the length, depth and colour may be defined at this stage. As before, the maximum length and depth are 40 and 25 respectively and colour is as above. An attempt to re-define a window without first clearing it will result in a **WINDOW DEFINED** error.

Since windows are stored in memory in a stack, you must clear them in the exact reverse order to which they are defined otherwise a **WINDOW SEQUENCE** error will result. You should plan your use of windows carefully in order to make the best use of the available window memory.

Clearing:

WINDOW n CLR

Bearing in mind the above restrictions, this command will de-allocate memory associated with a window definition thus allowing that memory to be re-used. You may only CLR a defined dynamic window (1-6).

Opening:

WINDOW n OPEN <xpos>, <ypos> [load]

Use this command to OPEN a defined dynamic window on the hires screen. The top-left block of the window is positioned at xpos, ypos relative to the top-left corner of the screen. No part of the window may lie outside the limits of the screen. The **LOAD** option, if specified, will restore the contents of

the window which were saved when it was last closed. Obviously, if the window has just been defined then the memory associated with it will contain no useful information. The newly opened window is selected and becomes the current window.

Closing:

WINDOW n CLOSE

When you use this command, the window is closed and its contents saved to the associated memory. This may be restored as described under **WINDOW OPEN**. If you close the current window, the default window (0) is selected.

Current window selection:

WINDOW n SELECT

You can switch control between open windows (including the default window) using **SELECT**. Cursor position and current colour are saved when a window is deselected (or closed when current). These parameters are re-loaded when the window is re-selected or re-opened with a **LOAD** option.

Special Notes: WINDOW

- As stated above, windows should be cleared in reverse order to which they are defined.
- The system does not take care of writing to a window when it is overlapped by another. You must close the overlapping window before writing to the overlapped window.

LOCATE <xpos>, <ypos>

Position the cursor

This command positions the cursor relative to the origin (top left corner) of the current window.

COLOUR <logicalcolour>, <colourcode>

Set a logical colour.

There are 5 logical colour registers defined as follows:

- 0 - Border colour (text and bitmap)
 - 1 - Foreground colour (bitmap)
 - 2 - Background colour (bitmap)
 - 3 - Screen colour (text)
 - 4 - Pointer colour (bitmap)
- Colour codes are 0-15

BASECHAR <asciicode>

Set the window clear character.

Use this command to set the 'clear' character used by the **CLW** command and screen scroll operations.

CSIZE <start>, <end>

Set the cursor type

The hires cursor size may be set by this command. By default, the cursor is 7,7 (1 line only). By way of an example, 0,7 makes the cursor a full block whereas 4,7 makes the cursor a half block.

PLOT <mode>, <xstart>, <ystart> [, <length>] [, <plotmode>]

Plot a pixel, horizontal or vertical line

The mode parameter defines the operation as follows.

- 0 - Pixel point
- 1 - Horizontal line
- 2 - Vertical line

The xstart and ystart parameters are the co-ordinates within the current window of either the pixel or the start of the line. When mode=1 or 2, the length parameter specifies the length, in pixels, of the line. An attempt to **PLOT** outside the window limits will be ignored. The plotmode parameter may be:

- 0 - Logical OR pixel with background.
- 1 - Logical XOR pixel with background.

MOUSE <OPERATION>

Performs a pointer operation

This is a multifunction command to allow control of the mouse/joystick controlled pointer in screen mode 1. The following operations are allowed:

MOUSE DEF - Define sprite number and pattern.

MOUSE DEF LOAD - Load sprite pattern block SCE00

MOUSE DEF SAVE - Save sprite pattern block SCE00

MOUSE SELECT - Select control type and control port

MOUSE LOCATE - Position pointer.

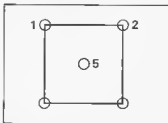
MOUSE MODE - Pointer on/off and active position.

MOUSE SPEED - Reaction speed.

This set of commands allow you to manipulate a particular sprite used as a mousepointer. In order to allow maximum flexibility, you can specify any one of 5 points on the sprite as the active position; i.e. the point on the sprite to which the resulting pointer co-ordinate applies. A 'pattern' is simply

a block of 64 bytes defining a sprite. Two internal pre-defined patterns (1 and 2) are supplied. Pattern 1 is a pointer with active position 1. Pattern 2 is a cross with centre over active position 5. Four further patterns (referred to as numbers 3 to 6) are defined at memory addresses \$CE00, \$CE40, \$CE80 and \$CEC0, but do not contain any data. Pattern number 0 may be a sequence of 64 bytes anywhere in memory. The active positions on the sprite are:

Now a detailed command description of the MOUSE options.



MOUSE DEF <sprite #>
[,<pattern #>[, <address >]]

Defines the sprite to be used for the pointer and its pattern. The sprite may be 1-8. By default, sprite 1 and pattern 1 are used. The pattern may be 0-6. The pattern is copied from the appropriate memory address into a sprite block under the Basic ROM. When pattern = 0, the sprite data is copied from the specified address. In summary:

- Pattern No. Definition Source
- 0 Specified Source
 - 1 International pattern 1
 - 2 Internal pattern 2
 - 3 External pattern 1 (\$CE00)
 - 4 External pattern 2 (\$CE40)
 - 5 External pattern 3 (\$CE80)
 - 6 External pattern 4 (\$CEC0)

MOUSE DEF LOAD "<filename>"
[,<device>]

MOUSE DEF SAVE "<filename>"
[,<device>]

You can load and save the external definition block at \$CE00 using these commands. Filename and device number rules are for LOAD and SAVE

MOUSE SELECT <devicetype>,
<controlport>

Selects the device and port for pointer control. Device type may be 0 (mouse) or 1 (joystick). Control port may be 1 or 2.

MOUSE LOCATE <xpos>,<ypos>
Positions the pointer. The co-ordinates are absolute pixel relative to the top-left of the screen.

MOUSE MODE <on/off>[,<activeposition>]
Switch the pointer on (1) or off (0) using this command. The active position may be 1 to 5. By default it is 1.

MOUSE SPEED <speed>
This is only useful with joystick control. Speed 0 is the fastest. This command simply introduces a delay in the interrupt routine which checks the mouse/joystick movement.

MODE <writemode>
Set the writemode for PRINT etc.

Use MODE to change the way in which characters are printed to the screen. By default a printed character completely overwrites any existing screen data. You can alter this to any one of the following:

- Writemode = 0 Overwrite background
- = 1 OR with background
- = 2 XOR with background
- = 3 AND with background

AREA <x1>,<y1>,<x2>,<y2>
Define an area to be tested by the IN() function

You may define any absolute area on the screen to be tested by an IN() function call. Basically, if the active position of the pointer falls within the rectangular limits set by x1, y1 (top-left) and x2, y2 (bottom-right) then a call to IN() will return a TRUE (-1) value. This is useful for checking areas that do not fall within a window and cannot be tested by an IN(window) function call.

IF <condition> **THEN** <action>
Conditionally perform a command or set of commands

This Basic 2 statement had to be altered slightly to allow full use of the extended command set. The only major difference is that you MUST specify the GOTO when branching to a line; i.e. you can't

say IF A=1 THEN GOTO 100. This was done so that the new versions of GOTO and GOSUB could be used to full effect. Note that the token value for IF is now \$B8 (\$216) instead of \$B8 (\$139).

CHAR <OPERATION>
Manipulate the character set.

Yet another multifunction/multiformat command. With CHAR you can load, save and redefine character sets. The options are as follows:

- CHAR MODE** Set the character data source
- CHAR DEF** Define a character
- CHAR LOAD** Load a character file
- CHAR SAVE** Save a character file

Normally, when a character is printed on the hires screen in screen mode 1, the data pattern which makes up the character is fetched from the in-built C64 character ROM at address \$D000. However, you can force the system to get it's data from the RAM which lies under the ROM. Initially, you can copy the ROM into the RAM but you may also re-define any character. This RAM character set may also be saved to, and re-loaded from, a file on tape or disk. O.K. So much for the theory, now down to the gritty details:

CHAR MODE <mode>[,<CLR>]

This sets the operating mode of the character data fetch subsystem. Mode may be either of 0 (ROM fetch mode) or 1 (RAM fetch mode). Specifying the optional CLR on a MODE 1 command will copy the ROM into the RAM. The amount of available window memory is reduced from 12K in CHAR MODE 0, to 8K in CHAR MODE 1. Bear this in mind when using MODE 1 along with windows.

CHAR DEF <char>,<byte1>,<byte2>,...,<byte8>

You can use this to re-define a character in CHAR MODE 1. An attempt to use this in MODE 0 will be ignored. The char parameter refers to the position in the character set and NOT the ascii code.

DIR [<device>] [<pattern>] [TO <array>] []
Display the disk directory or load it into a string array.

In its basic form DIR will display the full directory of disk device 8. You can

specify another device, for example 9. By specifying something like DIRB, "SL" you can select the files you want to look for (in this case anything beginning with L). You must specify both the device number and the S in the selection string.

Perhaps the most useful form is the TO array's one. As long as you define a single-dimension string array big enough to hold the lines of the disk directory (one line per element) then you can use the directory in your programs. A good bet is 146 elements since you can only have 144 files on a disk. There is a one line header and a one line footer. An example of the use of this statement would be

```
100 DIM CS$(146)
230 DIRB, "S" TO CS$(*)
```

You must specify the array with the (*) for syntax purposes. A typical directory line would be:

```
36 "DMA" "PRG"
```

You can use the MID\$ function to extract the name, size, etc of the file for further processing.

DISK <device>, <"commandstring">
Sends a dos command to a disk drive.

This command, which must be specified in its full format, will send a command to a disk drive whose device number is <device>.

EXEC <"progname"> [, <device>]
Load and RUN a Basic program.

Simply executes a LOAD and then a RUN. Do not use a secondary address with this command.

GOSUB <"subname"> [, <linenumber>]
GOTO <"subname"> [, <linenumber>]

ON <variable> **GOTO** **GOSUB** <"subname"> [, <linenumber>], ...

These three Basic 2 commands have been changed to allow the use of SUB name labels. SUB name labels MUST be in quotes. The 'undefined statement' error will result if no corresponding SUB statement is found. The ON statement is also used in connection with ERROR (see the entry under ON ERROR GOTO).

SUB "subname"
Define a point in a program with a

label

Labels must be in quotes and may be up to 30 characters long. Rules for line labels are as for other string literals. It is possible to use string variables in GOTO/GOSUB calls to SUB statements but can lead to untraceable programs.

AUTO <increment>

If you specify AUTO <increment>, automatic line numbering is turned on but a linenumber will not be generated until you type a program line. Hitting return on a line without typing anything else will temporarily turn auto numbering off. To turn it off completely, you must type AUTO with no number.

ERROR <errnum>

Print an error message whose number is specified.

Valid error numbers are 1-30 and 64-79. The message is printed but the program does not stop. The errors generated and their corresponding numbers are listed below.

Basic 2 internal errors

- 1 - Too many files
- 2 - File open
- 3 - File not open
- 4 - File not found
- 5 - Device not present
- 6 - Not input file
- 7 - Not output file
- 8 - Missing file name
- 9 - Illegal device number
- 10 - Next without for
- 11 - Syntax error
- 12 - Return without gosub
- 13 - Out of data
- 14 - Illegal quantity
- 15 - Overflow
- 16 - Out of memory
- 17 - Undefined statement
- 18 - Bad subscript
- 19 - Redim'd array
- 20 - Division by zero
- 21 - Illegal direct
- 22 - Type mismatch
- 23 - String too long
- 24 - File data
- 25 - Formula too complex
- 26 - Can't continue
- 27 - Undefined function
- 28 - Verify
- 29 - Load
- 30 - Break
- Extended errors**
- 64 - Out of window memory
- 65 - Too many windows

- 66 - Window defined
- 67 - Window open
- 68 - Window not defined
- 69 - Window not open
- 70 - Window parameter range
- 71 - Window sequence
- 72 - Area parameter
- 73 - Until without repeat
- 74 - Loop without do
- 75 - Do without loop
- 76 - Exit without do
- 77 - Bad label
- 78 - On error not active
- 79 - Resume with on error

ON ERROR GOTO <"subname">

linenumber

RESUME [NEXT <"subname">]

<linenumber>]

Activate, or return from, a runtime error trap.

This will allow you to trap runtime errors. When an error is detected and the ON ERROR trap has been specified, instead of the program stopping with an error message, execution jumps to the specified line. You can trap any runtime error with this. To resume execution of the program, you MUST use the RESUME statement which has three possible formats:

- 1 - RESUME
- 2 - RESUME NEXT

Since the ROM/RAM memory is 4K long, you can define up to 512 characters. Because you can display BOTH effective character sets on the hires screen, (unlike the text screen where you use SHIFT-COMMODORE to switch between sets), you have access to all 512 characters. The byte 1 to byte 8 parameters (you must include all 8) are the bit patterns for the character. You can find a list of the ROM character positions in the appendices of the Commodore 64 Programmers Reference Guide.

CHAR LOAD " <filename>"
[, <device>]

CHAR SAVE " <filename>"
[, <device>]

These two commands allow files of character sets to be stored on tape or disk. The method used to save the data is complicated by the fact that data under the character ROM and I/O devices cannot be directly saved to a file. What happens is this: The entire memory block between \$C000 and \$CFFF is swapped with the RAM under

the character ROM [\$D000 to \$DFFF]. The block at \$C000 is then saved to a file. After the save is complete, the memory blocks are swapped back again. The process is much the same for a LOAD operation except of course the data is loaded into the lower memory block. Not the most elegant of solutions to the problem, but it does work!

SLEEP <time>
Insert a delay into a program.

A simple delay statement. The time parameter is approximately in seconds

EVERY
This statement allows your program to be interrupted at regular intervals to perform a specific routine. There are 3 forms of this command.

EVERY <timeperiod> GOSUB <"subname">: <line number>
This statement switches on the interrupt system. The timeperiod is in 1/60th second intervals. When the interrupt occurs, the system waits until the current statement has been completed whereupon it GOSUBs to the specified routine. While the interrupt routine is in effect, no further EVERY interrupts may occur, effectively, the interrupt subsystem is disabled. It is restarted when the RETURN from the subroutine is executed. The interrupt is turned off by an untrapped error, a forced error, an EVERY CLR statement or by the program ENDING

EVERY CLR
Simply turns off any interrupt that is in effect. You do not have to turn the EVERY interrupt off to change it, simply specify another EVERY <timeperiod> GOSUB command

EVERY <timeperiod>
You can use this form to change the time interval of a currently active interrupt.

REPEAT <statements>
UNTIL <condition>
The good old standard looping structure used in unpeeped other Basics (but not in Basic 2 of course...).

DO [UNTIL WHILE <condition>] <statements>
IF <condition> then EXIT

EXIT
<statements>

LOOP [UNTIL WHILE <condition>]
A more general looping structure. Because the UNTIL/WHILE clauses are optional, you can test at either end of the loop, or not at all if you want an endless loop. The EXIT statement allows you to exit the current DO/LOOP structure and can be used with an IF statement or on its own as shown. A couple of things to watch for. You can't put a RETURN or END statement inside a DO/LOOP structure. This restriction has been imposed to prevent corruption of the processor stack which is used to store details of the loop start/end. Don't use a GOTO to exit from the DO/LOOP structure as this will have a detrimental effect on the stack. This rule also applies to the FOR/NEXT loops as well.

RENUMBER [<firstlin> [inc] [, startin]]
General purpose renumbering command

On its own, this command will renumber program lines beginning at line 10, in increments of 10. The parameters are as follows:

- Firstline - Specifies the line number to start with. By default this is 10
- Increment - Specifies the inter-line increment to be used during the renumber operation. By default this is 10
- Startin - Specifies the existing line number at which the renumber is to start. By default this is the first line of the prog

Special note: **RENUMBER**
This does NOT renumber GOTO and GOSUB linenum statements. This isn't such a bad thing since you can now use SUB labels instead, thus rendering linenum versions of these commands redundant

OLD
This is the bog-standard un-new statement.

APPEND " <filename> " [<device>]
Add a program on to the end of the

one currently in memory

Simply adds the specified file on to the end of the present file. The parameters are as for the LOAD statement, but don't use a secondary address with APPEND

3 - RESUME <"subname"> <linenum>

Format 1 will cause the program to resume execution beginning at the start of the statement that caused the error.

Format 2 will cause the program to resume execution beginning at the statement following the one that caused the error

Format 3 allows you to resume at any line in the program. You should take care when using this format since it is possible that the error occurred inside a FOR/NEXT or DO/LOOP loop.

You can use the ENUM function (described later) to find out what the error is (i.e. the error number, as described under ERROR) and the line on which it occurred

Basic function reference

WMEM(n)
Return free memory or window memory

If n = 0 the amount of free memory in the window memory area is returned.

If n = active window number, the amount of memory occupied by this window is returned.

LIMIT(n)
Returns the maximum limits of the current window.

If n = 0 maximum X block co-ordinate is returned

If n = 1 the maximum Y block co-ordinate is returned

If n = 2 the maximum X pixel co-ordinate is returned

If n = 3 the maximum Y pixel co-ordinate is returned

CSR(n)
Returns the present position of the cursor

If n = 0 the X position is returned

If n = 1 the Y position is returned

PTR(n)
Returns the absolute pointer position.

If n = 0 the X co-ordinate is

returned.

If $n = 1$ the Y co-ordinate is returned

INKEY(n)

Get a single character input from the keyboard.

If $n = 0$ INKEY will not wait for a key to be pressed

If $n = 1$ INKEY will wait until a key is pressed.

In either case INKEY will return the ascii code of the key pressed.

SWITCH(n)

Detects a button press on a mouse

The argument n is the control port number (1 or 2). This routine is designed around a Commodore 1351 proportional mouse. The left button, if pressed will return a value of 128. The right button will return a value of 64. If you are using a joystick, use the JOY function to read the button

JOY(n)

Returns the status of the joystick

The argument n is the control port number (1 or 2). The function will return 1 for UP, 2 for DOWN, 4 for LEFT and 8 for RIGHT. The button, if pressed will return 16. Obviously, it is possible for the value returned to be a composite of two or more of these values

CHRIN(filename)

Gets a character from a file.

Returns a character from an open file. Works like GET but returns a numeric ascii value. If there is a problem, CHRIN will return the value -1.

DSTATS(device)

Get the disk status message from <dev>

Returns a string which is read from the disk with device number <device>. Note that it is possible for this function to 'hang up' and it may be necessary to hit RUNSTOP-RESTORE to reset the machine. The hangup will only occur if the device is not present.

AT(n)

Returns the pointer position relative to the current window.

If $n = 0$ returns the X pixel co-ordinate

If $n = 1$ returns the Y pixel co-ordinate.

This is useful for getting the pointer position inside the current window. You can get the block position by dividing the result by 8, i.e. PRINT INT(AT(0)/8)

ENUM(N)

This function only returns useful information inside an error trap.

If $n = 0$ the function returns the number of the error which caused the interruption.

If $n = 1$ then the line number at which the error occurred is returned.

STRING\$(n,<"char">):<asciicode>

This will return a string n character long made up of either a specified <char> or <asciicode>. The length parameter may be 1 to 255. If the <"char"> is longer than 1 character then only the first character is used. For example: PRINT STRING\$(6,"0")
000000

CURRENTW(0)

This returns the current window number.

If $n = 0$ the parameters used in the last AREA command are assumed to be the area limits

If $n = 1$ to 16 then that window is used. The window must be open of course. If the pointer is in the area limits then the value -1 is returned, otherwise 0 is returned.

INSTR(["string", "string2"] [, startpos])


This function returns the position of string2 in string1. If it is not there, the value 0 is returned. The optional startpos parameter specifies at what character in string1 the search is to start. For example:

INSTR("ABCDEF", "E") returns 5
INSTR("hello there", "the") returns 7
INSTR("12345", "a") returns 0

IN(n)

Detects if pointer is in a particular part of the screen

You can use this function to check if the pointer is in a particular area of the screen in conjunction with the AREA command, or if it is in an open window



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B-Raid

Of all the pilots, of all the planes, in all of the world, you are the one to fly this one

By Al Dukes

You'd always been unlucky, and boy did you know it! You'd never won a crap game...lost every cent EVERY time.

When war broke out last week, you knew that even your luck was out. Hell, how many pilots could claim they had the first orders for a bombing raid in a war? You could!

You did have ONE comfort, your best mate received the very same orders. (But he said he was gonna desert; no war-crazed new President was gonna get his butt blown off!)

Maybe you could change his mind?

With these new planes, you didn't even know where you were going. They were pre-programmed to a set course and, when you reached it, your targets were announced to you by your TVSU (Tactical Visual Sonic Unit), but you didn't know a damned thing 'till then.

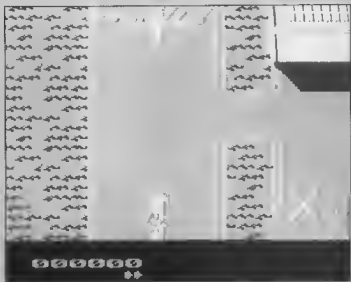
You prayed that the Military's group, 'Ashan Davis', had got their Sine waves right - if not, it was rasters for you! Will you return? Is it possible? Will your mate decide to join you? - God knows you'll need his help.

All you can do now is hope - and FIGHT!

Take the controls!

B-Raid is a game that can be played with up to two people. One takes a plane, the other a 'copter, each with their own advantages and disadvantages. You choose which to fly by plugging your joystick into port two for the plane port and port one for the 'copter.

Kill everything possible while staying alive... Bomb runways, ships etc' to gain maximum points...



All that elusive information is now at your fingertips with Help 64

By Andrew Leeder

It's late at night. Sitting in front of the glowing screen you work on your latest programming masterpiece. In your search for that elusive address or poke code, you reach for a hefty pile of reference books and magazines. After spending fifteen minutes thumbing through indexes, you give up in dismay. If this scenario sounds familiar, then this program is just what you need.

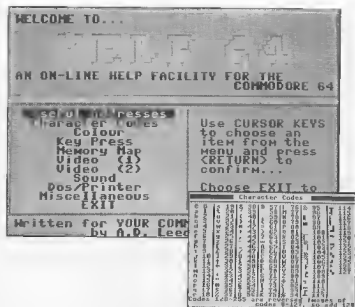
Help will provide ten screens of useful information ranging from video chip registers to screen character codes, all at the press of a key, yet still retaining slightly under 32K of Basic memory. HELP can be called at any time, and will remain transparent to well-behaved programs. If that is not enough you can replace the in-built screens with your own customised information screens.

Using Help

To load and activate HELP, simply choose it from the menu. Alternatively, you can load it independent of the menu with Load "Help",8. Once run, you can activate the screens by pressing the Commodore (C=) and Control (CTRL) keys simultaneously, thus suspending anything else the computer might be loading.

On the HELP menu, you will see eleven items. The first ten are the HELP screens available for viewing, the last item allowing you to exit and return to Basic. Use the cursor up and down keys to choose an item from the menu and press RETURN to confirm your selection. On any of the ten help screens, pressing the RETURN key will take you back to the menu, or pressing 'P' will send a copy of the screen to a Commodore 1525/801/803 or compatible printer.

HELP uses the 8K of RAM under the Basic ROM for storage of the ten help screens. The machine code is located at 34560-36847, with the 4K block from 36864-40959 being used for screen storage and manipulation. This leaves almost 32K of RAM for Basic, as well as the commonly used 4K of



RAM starting at 49152 free for your own machine code routines.

There are, however, restrictions that are imposed upon you. The two blocks of memory mentioned above cannot be used by your own programs, also HELP assumes that the screen memory is located at its default position (1024). Obviously HELP will not work harmoniously with all Basic programs or machine code routines, due to memory clashes or different screen positions, this is unfortunately unavoidable.

As HELP is interrupt driven, any other program loaded after it which makes use of interrupts will disable HELP. Also, pressing RUN STOP/RESTORE will reset the interrupts thereby disabling this program. To re-enable HELP simply enter SYS34560 and press RETURN.

Using your own screens

HELP is by no means limited to displaying the screens that are part of this program. You can design your own screens using normal PRINT statements and include them in the SCREEN GENERATOR program that is included on the disk. Each screen takes the form of a subroutine and consists of a 16 character string containing the screen heading, four numbers specifying

colours for the screen, and twenty-one lines of text. This is the format each screen should take:

```
1000 HD$="heading text Max 16
chars"
1000 BD=border colour          [0-15]
1000 BG=background colour     [0-15]
1000 FM=frame colour           [0-15]
1000 FG=foreground colour      [0-15]
```

1010-1990 up to 21 lines of help text each containing up to 38 characters and beginning with a space or cursor right symbol.

```
1990 RETURN
```

The first screen should begin at line 100, with each consecutive screen beginning at the next 1000 increment (that is 2000, 3000, 4000 . and so on). After creating your new screens, remember to run SCREEN GENERATOR to produce the new H-SCREENS file, containing YOUR screen data. Examination of SCREEN GENERATOR listing should clarify any problems.

Although HELP is primarily intended for use during programming sessions, it could also be useful for providing instructional or key press screens for commonly used utilities, such as sprite or character editors and the like.



Edit that epic basic program as many times as you want without losing anything
By A. Millett

Picture this scenario, it's time to fish out that basic masterpiece you wrote for the 64 and tidy it up. It has been a while since you worked on it, so you call up a directory of your work disk. This reveals that the last two versions were "superprog.28" and "superprog.29". Now, hang on! What exactly was the last thing you did to the program? Did you correct that odd bug in the sprite rotation routine, and if so, how? You recall making a dozen alterations, but what were they?

Fear not, instead of wading through that vast listing, *Program Compare-64* will give a precise anatomical list of what program lines were added, altered or deleted between the two versions. Running this utility reveals a half finished routine at I6000, which you now remember was where you last gave up on the program and went down the pub.

How it works

The program works by opening up the two files containing your programs and reading a program line from each file. If the lines are identical, they are ignored and two more lines are read. If the line numbers are the same but the text is different then the lines are listed as an alteration. However if the line numbers differ, then the line with the lowest number is listed as an addition/deletion (depending on whether it came from the old or new program file) and a new line is read from that file only. This whole process is repeated until the ends of both files are reached.

To use the program, you need to have the two versions of your program on the same disk. When you load and run *Program Compare*, a title screen with a brief description of the program is displayed, together with a request to insert your program disk in drive 0 and hit the space bar. Do so, and the directory of your disk will be

displayed. This can be terminated early by typing CTRL-X. Hit the space bar again, and enter the name of the older file, followed by the name of the newer file. Now you are asked to enter the device number, the secondary address number and the output filename. This defines where the listing will be sent to. For example:

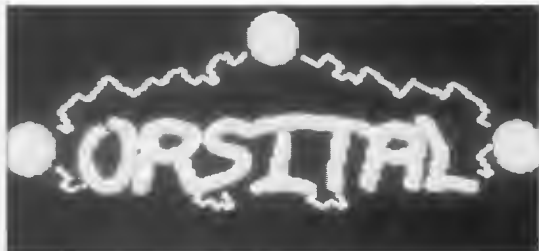
Type <RETURN> three times for a normal printer.

Type <RETURN> 7 <RETURN> <RETURN> for a screen listing

Type 3 <RETURN> <RETURN> <RETURN> for a screen listing

Type 8 <RETURN> 8 <RETURN> filename, s, w <RETURN> to list to a disk file

There isn't really any more to say, as the program will now whizz off, read the programs off the disk, produce the listings and end. It may take a while on big programs, so take a tea break and let it get on with it. Finally, it's worth remembering that although *Program Compare* is useful, it's no substitute for keeping good program work notes!



Collect the numbers in this unusual arcade style adventure

You are trapped inside a base on an abstract world known as 'Orsital'. Your objective is to escape this unfriendly environment.

You start at the base exit (that seems logical) which must be unlocked

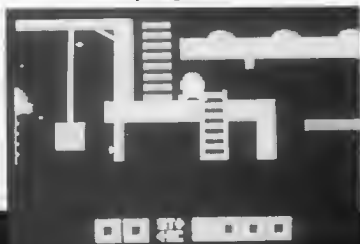
by collecting the numbers 1 to 9. These numbers are scattered about the base in no particular order.

Once you have collected all nine numbers, you make your way back to the exit which will now be opened, thus enabling you to escape to the outside world. This is no easy feat, because the numbers must be collected in ascending order. It is advisable to

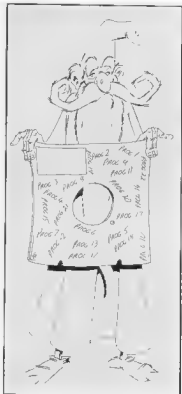
search out and locate just where the numbers are, before you start collecting them.

Control is quite simple. Plug a joystick into port 2, left and right moves accordingly, forward and back when on ladders. The fire button will enable you to jump. To pause the game, press INST/DEL and press the LEFT ARROW to reset (only whilst in pause mode).

By George Allen



By A. Bennett & M. Burchell



Now you can make efficient and effective use of your disk storage space

This utility will sort through all your files and count the number of blocks used by each file. It will then produce a list of files that can be saved to one disk side filling it completely, with no wasted blocks.

Using *Super Diskonomiser*, is simplicity in itself. When loaded and run, press spacebar on the opening screen. The opening screen was created with *PICTURE LINKER*, a utility to be found on *COMPUNET*.

Tap spacebar again after reading the scrolling message, and you are ready to begin. The first thing is to enter the number of blocks you wish to fill. For standard CBM format, enter 664. If you are using *DISK DEMON*, *PHANTOM*, *DOLPHIN DOS* etc., you may wish to use the 40 track option, in which case enter 749. You may select any number of blocks (max. 749) if you wish to fill partly filled disks.

On the menu screen you will be presented with several options, which are selected by pressing the first letter of each option.

You may enter files by the following methods:

(M)anually typing in the filename and number of blocks as prompted. Exit from this by pressing RETURN without entering a filename

the list is O.K. press 'Y'. **BUT NOTE** that the selected files will be removed from memory if accepted, so if you do not have a printer, you must copy the list BEFORE accepting

If you have selected **PRINTER ON**, the list will be printed out when you press 'Y'. (The screen will flash blue and grey while the search is in progress). If the computer does not find a list to fill the number of blocks selected, it will stop after a couple of minutes and give you the option of searching for one block less

(P)rinter ON/OFF toggles printer on/off.

(B)lock search allows you to enter the number of blocks you wish to fill

(L)ist remaining files will list all files in memory to the screen, and to a printer, if printer on is selected

(C)lear and restart will clear all files from memory and start the program again.

(O)ut will reset the computer to power up.

With the last two options, you will be asked if you are sure, as the results are final

Limitations

The maximum number of files that may be entered is 100, although you may 'top up' as files are removed from memory

The number of disks you can save depends on how careful you have been



(A)uto enter is much easier and quicker. Follow the prompts and the program will read the filenames and blocks off disk

You may accept or reject filenames by pressing Y/N, but a third option is provided. If you have, say three files that belong together, you can ADD them by pressing 'Y' for the first file, and 'A' for each of the subsequent files. The blocks for these will be added together, so that when *Diskonomiser* operates, these files will be selected together

(S)earch will start sorting the blocks and will produce a list on screen. If

in the past when saving files, but 15 to 20 percent is not unusual. If you use a file compactor on your files first, a saving of around 50 per cent should be possible. Just think, disks at effectively half price!

The program has been tested to destruction, and no gremlins have shown up, but if you do find any, **DO NOT FEED THEM AFTER MIDNIGHT!!!**

Loading instructions

LOAD "DISKONOMISER"; B and RUN if you do not wish to use the menu option

Rasters and Colour

Another excursion into the colourful world of raster bars and flexible line distance

By Andy Partridge

Spurred on by last month's introduction into using the raster to create visual effects, written by Miles Bairy, I decided to expand on his theory and include my own renditions.

Rasters...amazing what you can do on each of the lines that make up the picture you see on the screen in front of you. On each line you have about enough processor time to change the screen and border colour many times, change the character set, disable the side borders, shift the screen down, dance and play the bagpipes.

Most of you have probably seen the effect where the screen colours are split half way down, and the colour changes. This article will attempt to show you how you can easily achieve this effect, changing colours on EVERY raster line, keeping them flicker free of course.

On the disk, there are 3 source listings and a finished example. The source listings need either 6510+ assembler or Mikro assembler.

Load up Rasters 1 and assemble it. Start the program off by SYS49152. You should now have a selection of pretty colours on the screen in front of you. When you have had enough, hit RUN/STOP and RESTORE and list the program. The comments on the listing will show you exactly how it is done. (Some machine code knowledge will be required for the more serious details). Anyone can change the colours at the end of the listing and start it again.

Briefly, the program works by using VERY small delays to display each colour for an exact length of time. The

first real headache in timing this, is this. Not all 255 raster lines have the same timing values! Aaaigh!! This is because:

(Quote. Page 449 of the PRG.. 'The character pointer fetches occur every eighth raster line during the display window and require 40 consecutive phase 2 accesses to fetch the video matrix pointer'. Phew! (Who wrote that?-Ed) What this means, in English, is that while on the screen area, every eighth line needs a shorter delay while the Vic-II chip does its bit displaying screen data. Hence the '1' in the 8 byte long delay sequence. This causes further problems in that if you don't start your routine on a multiple of 8 (Either side of \$32) you have to adjust this table. Life's full of fun eh? Just think of the poor people that worked out these timings! Apart from that, the listing talks for itself. (Well, not literally).

Another trick you can employ is to shift the video matrix down, leaving gaps between the 25 screen lines. This technique is known as FLD or Flexible Line Distance. (Invented by 'White' of Holland). If you load Rasters 2 you will see a simplified version for bouncing portions of the screen up and down. Examine the listing and I will attempt to talk you through.

If you take the value in \$D012 (The raster compare register) AND it with

\$07 then OR is with \$10 and shove it into \$D011, the Vic-chip says 'what line?' and misses a raster line out thereby shifting the screen down one pixel. Keep doing this and the screen keeps going down. In doing this, you can either bounce the screen up and down, or do more in the spaces between the screen lines. (Seeing as

the Vic-chip doesn't do it's Page 449 every 8th line trick)

Assemble Rasters 2 and SYS49152 to activate. Nothing much happening eh?? Try moving the cursor up over the coloured area! HaHa! Rasters 3 will show you a more practical side of using FLD. Rasters Demo is a little demo I put together. It shows some of the things that are possible with a little thought. To see it in action either select it from the main menu or load and run it independently. Zippy and George. I Now you have your routine up and running, you are going to need some ideas and colours to get you off to a good start! Here are a few values to put into your colour table (COLTAB) for the various coloured bars.

Blue: 6, 14, 3, 1, 3, 14, 6
Green: 5, 3, 13, 1, 13, 3, 5
Red: 2, 10, 1, 10, 2
Grey: 11, 12, 15, 7, 1, 7, 15, 12, 11
Green: 2, 9, 5, 13, 5, 9
Purple: 6, 2, 4, 10, 15, 7, 1, 7, 15, 10, 4, 2, 6
Brown: 9, 2, 8, 10, 15, 7, 1, 7, 15, 10, 8, 2, 9

Large bar ideas (Only one half of Bar! reverse for bottom half)

Blue: 6, 0, 6, 14, 0, 6, 14, 3, 0, 6, 14, 1, 14, 6, 0
Green: 9, 0, 9, 5, 0, 9, 5, 13, 0, 9, 5, 13, 1, 13, 5, 9, 0

To border things off, try:

Purple: 6, 2, 4, 10, 7, 1, 0 (size of window), 0, 1, 7, 10, 4, 2, 6
Blue: 6, 14, 0, 6, 14, 3, 1, 1 (size of window), 1, 1, 3, 14, 6, 0, 14, 6

I hope that these colour ideas have sparked your imagination!

Sid Sequencer



We iron out a few of the questions regarding the Sid Sequencer program from last issue.

By Vic Berry

We have received many letters from you all with regards to the Sid Sequencer program, published in the last issue of CDU.

The main queries seem to be regarding the facility for making your own sequential music files into machine

code, to run alongside your own programs.

You cannot load the sequential music files directly into a monitor, you must first load the sequential files into the computers memory from within the Sid Sequencer program. I must point out at this time that if you are using the 6510+ assembler, you will come across some conflicting use of memory locations, namely in the \$C000-\$CFFF block. (It appears that the 6510+ uses this area for its symbol table). Using

a different monitor program should cure this problem.

Secondly, if you have tried to use the Filter Demo program that is on the disk, you will have found that it does not work properly. This is because the Sid Sequencer program was compiled and the Filter Demo was unfortunately not. The remedy is to make a back-up of the software. Below you will find instructions for 'Making your own Music Code' and 'Making a back-up Disk'.

Procedure for making music code

- 1) Insert CDU system disk
- 2) LOAD "Sid Sequencer",8
- 3) RUN
- 4) Insert disk with your music files
- 5) Select DISK MENU
- 6) Change current filename to the name of your file
- 7) Select LOAD SOUND
- 8) Select LOAD MUSIC
- 9) Exit DISK MENU
- 10) Select NOTE EDITOR
- 11) Press CTRL and S to reset note counters
- 12) Exit NOTE EDITOR press F7
- 13) Exit program
- 14) Insert disk with your MONITOR
- 15) Load and run monitor
- 16) Insert own disk for save machine code files
- 17) Save Sequencer code from \$C000 to \$C10B
- 18) Save note table code from \$CA00 to \$CAFF
- 19) Save music code for \$CB00 to \$CFFF

- 20) Exit monitor
- 21) Type or load your own program with the Basic loader [See the listing in the article]
- 22) Run the loader and the machine code files will be loaded and executed

Procedure for making back-up

- 1) Insert CDU system disk
- 2) LOAD "SID SEQUENCER",8
- 3) RUN
- 4) Exit program
- 5) Insert back up disk
- 6) SAVE "SID SEQUENCER",8
- 7) NEW
- 8) Insert CDU system disk
- 9) LOAD "FILTER DEMO",8
- 10) Insert back up disk
- 11) SAVE "FILTER DEMO",8
- 12) Insert disk with monitor
- 13) Load and run monitor
- 14) Insert back up disk
- 15) Save Sequencer code from \$C000 to \$C10B

- 16) Save note table code from \$CA00 to \$CAFF
- 17) Exit monitor
- 18) SYS64738 to reset machine
- 19) Insert CDU system disk
- 20) LOAD "SID SEQUENCER",8
- 21) RUN
- 22) Select DEMO ROUTINE
- 23) Load files press F3
- 24) Exit DEMO ROUTINE press F7
- 25) Select NOTE EDITOR
- 26) Switch SEQUENCER OFF press F5
- 27) Press CTRL and S to reset note counters
- 28) Exit NOTE EDITOR press F7
- 29) Select DISK MENU
- 30) Insert back up disk
- 31) Select SAVE SID
- 32) Select SAVE MUSIC
- 33) Exit DISK MENU
- 34) Exit program

Your back up disk should now be ready for testing and I trust that these instructions clear up some of the obscurities of this program.

Introduce some lively characters into your programs with this easy to use Sprite Editor

By Austen Darnell

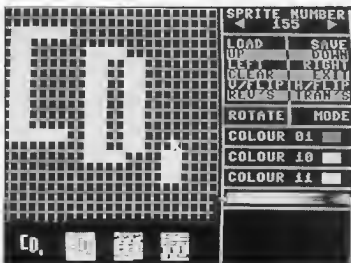
As we are all aware, most games and utility programs incorporate sprites of some description or other. Designing sprites can be a cumbersome task, especially if we do not possess an adequate ability to do the job for us.

Most sprite editors are fairly extensive in their repertoire these days, having such things as rotate, inverse, scroll, mirror, copy etc. etc. Some editors even have the facilities for re-designing character sets and screens. This is all very well, but occasionally you don't want, or need, such a complex editor. All you need is something to make the task of designing your sprites easy. This is where the *Sprite Editor 1* comes in.

I have kept the functions in the editor as small as possible, but managing to retain a fair amount of flexibility.

To use the editor, simply select it from the menu and ensure your joystick is plugged into port 2.

Sprite Editor 1



Commands available

Menu

This is a block of commands situated to the far right of the graph. To operate any of these commands simply press fire in the appropriate box.

Load

To load your sprites, move the icon over the load command on the menu

Save

To save your sprites, move the icon over the save command on the menu

Exit

This enables you to exit the program. (make sure you save your creations to disk before hand as this command will erase all your work).

Up

This will scroll the sprite up one pixel within itself.

Down

This will scroll the sprite down one pixel within itself.

Left

This will scroll the sprite left one pixel within itself.

Right

This will scroll the sprite right one pixel within itself.

Clear

This command will erase the sprite that you are currently working on

Vertical flip

This command allows you to flip a sprite vertically

Horizontal flip

As above, except that the flip is in the horizontal plane

Reverse

Enables you to reverse the sprite being worked on.

Transfer

This will transfer a sprite to your required position.

Rotate

Rotates the current sprite being worked on through 180 degrees.

COL 01, COL 10, COL 11

These commands will change the appropriate pixel combination colours (in normal mode only COL 10 will operate).

Animate

This will animate a series of your creations at your required speed

Mode

Alternates between multicolour and normal mode

< >

This increases/decreases the sprite frame. The sprite frame number is displayed between the arrows.

JAMES BOND 007TM

LICENCE TO KILL

Bond wants revenge and he wants it bad! Why? because he does, that's a movie character for you! Bond has to fight his way through the 6 sections of the game and then defeat Sanchez (The evil drug baron!).

Scene One sees Bond in a helicopter, swooping low over Cray Cay to stop Sanchez escaping with his beautiful girlfriend (And she certainly is that...!) Tall buildings and gun turrets appear in front of you as you try to gun down Mr Nasty's jeep.

In part two Bond jumps out of his helicopter, and using his beretta he embarks on a commando style run up the screen, avoiding exploding oil barrels and men who internally combust after one shot (I'll never understand this...!)

Part three sees Bond swinging on a rope from another helicopter (Or maybe the same one!) trying to attach it to the back of Sanchez' aircraft.

Swimming in a sea of drug smugglers and high speed boats starts off Scene two, and when a Drop Plane arrives you have to harpoon it and then off you go into Part Two. As you waterski barefoot behind the seaplane, you have to dodge mines whilst working your way up the rope to gain control of the plane and escape.

In the final part, you have to drop from the plane onto 18-wheeler tanks, and then crash and destroy all the tankers along the road until you reach the final tanker (which contains Sanchez) Jeeps containing Stinger missiles, try and stop you using your LICENCE TO KILL on Sanchez. And thats it...! After completing the game once, you get a rather pitiful ending screen and then get to play it again (I.E. It wraps round...)

Some parts of the game are much more playable than others. I like the commando section, it's fun spinning round and shooting all the oil barrels!

Graphics are quite good throughout, and the David Whittaker soundtrack and sound effects are very good

(I LOVE the game over tunnel).

Overall, this is a much better conversion than (Cough... Cough) A view to a kill was, and a very playable game. Congrats **Domark** A very playable Bond game (At last...!)

At a Glance

Title: Licence To Kill

Supplier: Domark

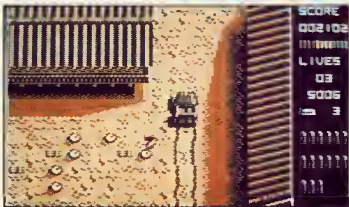
Price: £12.99 Disk £9.99 Tape

Graphics: Crisp, Smooth and Well Defined

Sound: Great Dave Whittaker Music & FX

Playability: Good fun to play

Addictiveness: A good desire to play later Scenes



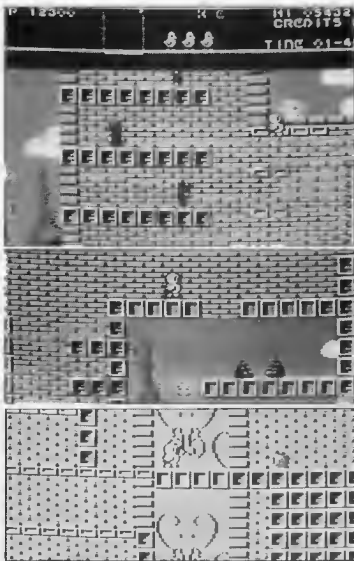
New Zealand Story

Are you sitting comfortably? Then I'll begin. Once upon a time boys and girls, there were lots of malicious bunnies. Evil creatures who, together with some nasty, bloodsucking bats and a few killer frogs throwing boomerangs from balloons, spent their lives terrorizing the hero of our story.

All these nasty creatures paled into insignificance though, when compared to the real villain of the piece - Wally the Walrus. Wally has a tremendous appetite and his favourite food is kiwis. Now kiwis are fairly stupid animals. Ugly to look at, they can neither fly nor swim, both of which are useful attributes if you happen to be a bird. Nevertheless, they are the national symbol of New Zealand and because one of these creatures, called Tiki is the hero of this story, we will use a little artistic licence and call them cute.

No less than twenty of Tiki's friends have been captured (which just goes to prove how stupid kiwis really are) and it is up to our hero to affect a rescue. Armed only with a bow and arrow (and you accuse ME of overuse of artistic licence) Tiki must charge round, shooting baddies and trying to find his friends within a set time limit. There are radar screens and the occasional arrow scrawled on a wall to help him. Moving through the air is accomplished by hijacking one of the aforementioned balloons and you also find yourself involved in several underwater adventures where you have to keep a close eye on your oxygen supplies.

In addition to all these hazards, there is the occasional encounter with one of Wally's special friends, ie a big



At A Glance

Title: New Zealand Story
Supplier: Ocean
Price: £14.99
Graphics: Bouncy
Sound: Bouncy
Gameplay: Bouncy
Value: Very Bouncy

baddy who you will have to overcome, sometimes by unconventional means. To kill the whale, you have to let him eat you first!

Despite what I have just written, New Zealand Story is actually very

addictive to play. Regressing to a few ideas borrowed from the old fashioned platform game, there is not a great deal to challenge you intellectually but it cannot be denied that N.Z.S. is tremendous fun

BACK ISSUES

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Disk Dungeons

Welcome to another **Disk Dungeons**! and good news to boot! As you read this, plans will have been finalised to start producing this magazine on a monthly rather than bimonthly basis. Naturally, this means twice the copy in your favourite column.

To this end, I am asking, once again, for your input. This can be in the form of letters, maps, hints and tips or whatever. In fact anything connected with adventures and role playing games. I don't mind if your letters are abusive (well, perhaps not too abusive) as long as they are likely to provoke further thought and comment. Indeed, you are more likely to get your masterpiece published if you avoid the sort of gushing 'I think you are brilliant and the best thing ever' type thing, although the odd bit of crawling never goes amiss! Please write to me, GORDON HAMLETT, c/o Commodore Disk User, Argus House, Boundary Way, Hemel Hempstead, HP2 7ST.

There is only one review this month but as it is a pretty good game, I don't think that you will mind too much.

Other reviews have already appeared in rival publications (the problems of different deadlines and CDU being bimonthly) but all the reviews that I have read so far have been fairly cursory. Games like this deserve to be played in depth before they can be commented upon accurately.

There are significant differences between this game and its predecessor. Some of these are obvious but many of the games subtleties only come to light after prolonged playtesting. At the time of writing, I am about two thirds of the way through the game.

Curse Of The Azure Bonds

One of the highlights of the role playing year last year, was the arrival of *Pool of Radiance*, the first officially licensed Dungeons and Dragons game from S.S.I. it was by no means perfect but it was pretty good nevertheless.

Now comes the second game in the series, *Curse of the Azure Bonds* and it is good to be able to report that the programmers have not sat back on their system and turned out a new story, but have made some important changes that improve the gameplay considerably.

Although linked to the first module, *Curse* is a totally stand alone game and you do not need to have played *Pool* first, although you can transfer your favourite characters over should you desire but not the equipment that they were carrying.

The story line is intriguing. After you saved the City of Philan in the first module, you picked up rumours about a disappeared princess in the nearby town of Tilverton. It should have been an easy journey, but your party got ambushed on the way by a group of invisible assailants. When you awake from what you presume is a drugged sleep, you find that you are in Tilverton after all. Perhaps theft was the motive, as all your equipment is missing but then you notice your arms. Five strange symbols are imprinted there, existing below the skin and feeling as if they are moving.

As you progress through the game, you learn more about these bonds. To start with, you can do nothing about them, they are much too high powered for the likes of you. Your only hope is to find the five members of the evil alliance that put them there and force them to remove them. The only slight problem is that when the symbols start

to glow, you feel compelled to obey their command even though this might be the exact opposite of what you would normally want to do.

You can have up to six members in your party and this is recommended as things soon start to get pretty heavy. New characters start the game at fifth level but anybody transferred from Pool will have whatever experience they earned in that game. Other, non-playing characters may also join your party at various intervals throughout the game.

There are two new character classes available to you-ranger and paladin and the latter is highly recommended - not only can he cure disease and light wounds, but he also emanates a permanent protection from evil spell.

If you do transfer characters, it is worth noting just how far they can progress. There is little point in taking anyone who can only go as far as level 6. Also, watch out for elves. Due to a quirk in the original rules (and one that is under reconsideration) elves cannot be resurrected even though your cleric will soon acquire a raise dead spell. As there is a pretty good chance that everybody is likely to die at least once, you might find that you have built a character up for nothing.

Whereas in Pool, the monsters were fairly predictable and easy to overcome, you will soon discover that in Curse, there is no such thing as an easy battle. Not only do the monsters fight back, but they have real teeth as well. Crisping your first party of orcs with a fireball spell gave a great feeling of power. It is not quite as much fun when the enemy start tossing them back at you.

The presence of spellcasters in the enemy ranks means that you have to think a lot more about your combat. Not only do you have to counter the people standing in front of you hacking you to bits, but you also have to make sure that every magic user and cleric is hit each round in order to stop them from casting a spell on you. Thus you might have to conjure up a fireball or ice storm, even though you know that some of your own party will take damage as well.

Just to make life doubly unfair, a lot of spellcasters protect themselves from spells up to third level so your hard earned fireball and lightning bolt has no effect whatsoever. After all, if

you can do it, why shouldn't they? The enemy are also likely to use any magic weapons that they might possess.

The type of monster is also somewhat advanced when compared to your average goblin. Black dragons spit acid and you don't just find one on his own. Dark elves and salamanders abound. Shambling mounds will smother you as soon as look at you. There are efreeti and displacer beasts, hell hounds and giant slugs. Then there are the really nasty ones! A dracolich is an undead dragon and then there is the beholder, possibly the most feared creature in existence.

You will of course have access eventually to many powerful weapons and spells yourself and believe me, they will be needed. The balance between fighters and magic users is just about right. Although a single spell can cause much damage over a large area, it's the fighters who tend to deliver the coup de grace. Remember, the only good enemy is a dead one and it is often good tactics to gang up on one

opponent and kill him rather than attacking and wounding several. Not every spell that is mentioned in the D&D handbooks is present in Curse but this is as it should be and is a useful tip for anyone running their own campaign. If something doesn't fit or is likely to ruin the balance of your game, then don't use it.

There is a real feeling that you are fighting for your lives in Curse and this adds considerably to the atmosphere of the game.

One of the main problems with Pool was that it was very inconvenient to heal your characters after battle. Now, when you encamp, there is a 'fix' command. Everybody who can, casts as many cure spells as they can in one fell swoop. Even though this still takes up game time, i.e. you can be interrupted by wandering monsters, it is infinitely easier to implement than the old method and adds considerably to the gameplay.

The main argument that I have seen levelled against Curses' that it is very



much a hack and slash game and that combat prevails. Well, yet it does but I don't believe that the game is the worse for that. After all, if you took all the combat out of the *Arthurian Legends* or *Lord of the Rings*, you don't have a great deal left.

There is limited interaction within the game – some characters must be spoken to, rather than attacked, as they have important information to impart. There are many clues that you acquire throughout the game – gossip picked up in the local tavern, maps and letters taken from vanquished foes and so on. These are all detailed in an excellent accompanying booklet and help to flesh out the story more than adequately.

I enjoyed playing *Curse* much more than *Pool* and that is saying a lot. Certainly, I would recommend it as a must for any role playing fan. There is so much more to get your teeth into.

One final word of warning though. I would strongly suggest that you have two separate save game disks. With a game of this size and complexity, it is impossible to guarantee that every last glitch has been removed. If you think that this sounds like a cry from the heart, then you are right. Just after removing my third bond, I ran into an infinite loop of veggygimies. I will have to start all over again.

Title: *Curse of the Azure Bonds*
Supplier: S.S.I. via US Gold
Price: £24.99

By a timely coincidence, the arrival of *Curse* in the office also sees the final instalment of hints for its predecessor, *Pool of Radiance*.

You should now be ready for the final assault on Valjevo Castle itself. The entire structure consists of four 16x16 squares. Around the outside, there are a series of buildings containing a series of supporters of Tyranthraxus. There are two gates leading into the middle section which is a maze of poisonous hedges. In the centre of the maze, there is the tower where the evil T himself is hiding out. You enter the castle in the south west quadrant.

The Outbuildings

Most of the creatures that you are likely to meet here are giants so it could be worthwhile putting all your dwarves in the front row. If you don't wish to get into too many battles, then there

are two passwords that you can use when you parlay with the monsters. Choose meek and say 'Harashi' or choose haughty and say 'Tyranthraxus'.

In the south west quadrant, there is a laundry where you can pick up disguises, a smithy and smoke house where you can rest and a temple dedicated to Bane. If you are not evil and accept the blessing or if you take the money, you will get blasted. If you don't take the blessing, you will be attacked. If you try to use the swords and are not evil, you will again take magical damage.

In the south east, there is a house full of snakes, a barracks complete with giants and a well with treasure at the bottom (but only send characters with high constitution to investigate it). You may also find the traitor Cadorna here, depending on what happened earlier in the game. If you free him, he will join you, otherwise he will try to raise the alarm in the hope of gaining favour. There is also one of the two gates to the maze here (the other is in the north west quadrant). You will need either someone with exceptional strength or a knock spell to open it. Failing that, get Cadorna to tell you the password.

In the north east section, the kitchen also contains a useful password and there is much information to be learnt in the scribes office. There is not much in the north west corner apart from more giants and another gate. Search the officer's quarters for treasure.

The Maze

This is again divided into four F1 Rooms with a building



in each of the outside quarters. The only useful one is the one in the north west corner where a magic user should have some information if you approach him. Any of these buildings can be used to rest in, after you have cleared them of monsters. There are also four teleports in the maze which relocate you randomly to one of the other three sites. Finally, don't walk into any of the hedges, they are poisonous.

The Inner Tower

Depending on which door you enter by, you may meet the false, human Tyranthraxus. Parlay to avoid a fight. Otherwise, look out for the pet Medusa, you can't really afford to have one of your characters turned to stone. Use a mirror to attack her.

On the upper floor, do not look down the trap door as this leads to the Medusa's lair. Be nice to the messengers and also to Genheeris, the second in command, who will join you if you attack his boss straight away. Before the final confrontation, cast as many defensive spells, such as bless, on the party before entering the lair. The guards will conveniently line up for you. Have your magic users move round and cast lightning bolts along the line. Against Tyranthraxus, it is just a case of hit and hope.

Should you win the battle, you see a pretty naff ending screen before being whisked off to Phlan for your final reward. If you want to, you can still go out monster bashing for a few extra experience points.

Finally this month, how would you like a free adventure game? Of course you would, especially when it is written by the wonderful **Magnetic Scrolls Team** [The Pawn, Guild of Thieves etc].

Myth is not available in the shops but is available free to members of **Official Secrets**, the Magnetic Scrolls adventurers' club.

The game arrived in the office just as we were going to press so I have not had chance to have a proper look at it yet. Set in Ancient Greece, *Myth* recounts a power struggle amongst the Gods as seen through the eyes of Poseidon. I will give more details next month but for anyone who cannot wait that long, you can get more information about **Official Secrets** from **Tony Rainbird** or **John Trevillian** on 0279 736585 (Inter-Mediate Ltd).

Help yourself to a Colour printer

To celebrate our 2nd Anniversary we are giving away a Star LC10-Colour printer



Now is the chance to put all your artistic talent and programming knowhow to good use. A lot of users do not get the full benefit from their computer, due to not owning a printer. The cost of a decent printer may also be a contributing factor for many of them not purchasing one. *CDU* comes to the rescue!

As part of our celebrations on becoming 2 years old, coupled with the fact that we are now a monthly magazine, we are giving away a **Star LC10-Colour printer** to the winner of our competition in this month's issue. 50 runners up will each receive 5 blank disks. As an added bonus, 1 lucky reader will end up with his masterpiece on the front cover of a future issue of *CDU*.

The competition is fairly straightforward. We have buried a printer in a secret location somewhere in England. (Note: This does not include Wales,

Scotland or Ireland). All you have to do is make an intelligent guess as to its whereabouts. Now for the competition rules and procedures.

Competition rules

The idea is that you should design a demo screen which **MUST** include a map of England. Obviously, the map need not be 100% accurate, but as near as you can get it. On the map you simply put an 'X' where you think the printer is (Alongside the 'X' should be the town/city name).

The demo screen can be anything that you may think is suitable. (Raster bars, Scrolling text, Sprites, Music, etc etc). The only stipulation is that somewhere on the screen is the map with your 'X'.

The demo need not be in machine

code. You can use any language you like providing it will run on a standard C64 or C128 disk.

The winner will be the first entry that has the 'X' in the correct position/location when the competition is judged. The next 50 correct/nearest submissions will each receive a blank tape.

Finally, the sender of what the Editor thinks is the best all round demo will have his/her creation on the front cover of a future issue of *CDU*. I shall be looking for a number of factors here: Programming ability, visual presentation, use of colour, sprites, redefined chars etc etc.

Closing date for the competition is **1st January 1990**.

So there you have it. Put those thinking caps on. Get out your art packages and assemblers and get going... Let's have those creations.



Diary of a

If you have ever wondered what makes a programmer tick...read on!!

Day 1...Wrote Mr Kipling, and this issue see's the start of my 'Diary of a Programmer' series, but instead of writing a long and complicated game (Arghhhh!), I will be writing a DEMO (Yeeahhh!) As well as a few other projects that will crop up from time to time!

Firstly, I formatted a couple of disks for this project! I always use the slow formatter, and not a fast one, as an amazing amount of errors crop up with them! I then copied my version of Dave Weavers 6510+ assembler onto one side (Mine has source code at \$4000, for writing coded in bank 0).

I spent some time drawing idea's on sheets of paper and only ended up with a quick ANDY logo. Most unhelpful, it's almost ALWAYS a good idea to have sheets of paper around, so when you feel a creative urge coming along you can stick idea's down on paper so as not to forget them! Sometimes, when you want idea's to flow out, they don't, and it's a good idea to have various idea's to fall back on.

Next I phoned Deek about doing some music, and he said he would after he'd done something for someone else, then phoned TDK and asked him to convert 'Eternal Flame' if he could, for another part of the demo.. Will he do it? ..

Day 2...Phone BIZMO (Our Graphic Artist) and spent an hour talking about ideas and artwork for the demo. In the end we decided on a Burnt Logo (!) Excess and Breast (!!) and something 'Fantastical' (!!!7!!7). Now I have to decide what else to include, Fixed my Logo Editor so it worked with my old 64 (Kelly blew up my other!) So all you coders out there...remember this: Old 64 Kernal's clear the colour memory

(\$D400) to the Screen colour (\$D021), and not to the cursor colour (\$02B6) like the new ones. When you put colours on the screen do: LDA COL STA \$D021, STA \$02B6, JSR SE544..

Day 3 After Four days I still haven't received the graphics Bizzmo posted... Work really can't go on without them!

I would just like to point out that this diary is not written one day after the other! It's VERY hot at the moment, and therefore I spend little time on the 'puter...

Saw a nice effect on the Amiga today An acid man changing faces and doing things... Must get Bizzmo to knock up something like it. BIZMO! (What now...).

Day 4... (Still no graphics!) Coded a 4 by 2 scroll today I don't like scrolls, but there are so few ways of displaying information so easily. Maybe a new idea will come to mind by the end of the project. Spent 20 minutes drawing some bubble sprites for a 'Colour Fade Sinus Routine' idea I had! (heh...!) I HAD to think of a few new idea's... (Hard as it usually turns out to be)

Day 5...We gave up on Royal Mail (after a week) and Bizzmo sent me the graphic files by phone (should have done that in the first place...) I can only say they are of an AMAZING standard, with a beautiful black bouncy bikini braced brunette lying across a crisp colourful logo and a logo with flames dancing inside it. Have to set to work displaying all this... Tomorrow!

WOAH! You are NOT going to believe this but I've seen a routine that allows 16 (YES SIXTEEN!) Colours in a HIRES 8x8 square! It's called FLI GRAFIX and was coded by BLACK-MAIL, and hopefully I'll get sent the

editor for it to use in this project soon! I thought of a way of achieving a similar effect, by overlaying sprites on top of a Bit-map to give a few extra colours (Depending on how the sprites were multiplexed, and what mode they were in) I might use this technique to give a moving Bit-map a black/white border... We shall see! Off on Holiday for two weeks, so no work on the computer during this period!

Day 6...Back from holiday (Wow! that was fast!) While on holiday I drew up several more idea's and a game design. It's a fast ORIGINAL arcade game based on an idea I had whilst visiting a Banana Plantation (And under the influence of Banana Liqueur).

If a Company/Programmer out there wants a design for an original game, then contact me at the address at the end of this episode! "Banana's" is up for grabs! (And some others!) (Advert over).

Wrote a text screen today for Credits, Phone Numbers etc. Didn't take long! I'll put it at the front of the demo so people don't need to go searching when wanting to order Code/Graphics and Music for themselves! (And you will do!).

Bizzmo sent me a 4 by 4 character set today, he said he only did it to try out the editor! WHAT? If that's what he does to try out the editor, I'm giving up drawing all together before he shows me up completely! Wrote a routine to display it, only to be told he was doing a 'Proper One' over the weekend Arghhhhhh!

Day 7...Got Citadel today to review, and saw a FLI routine on the title screen. Was it intentional Mr Walker? Or did you just mix colours and THEN notice it? Looked into the idea of using

programmer

By A Partridge

a real-time rotating logo, worked out how much processor time it takes for a 30*6 area, and decided against it. I'm starting to get REALLY fed up with the lack of processor time on the 64 True, you can do a lot if your clever... BUT you always seem to have not ENOUGH for something your trying to do

Day 8....Another talk with Bizzmo, and a few more idea's came to light, such as some fading pictures for a story, some '9 Colour' scroll fonts and some 'Animated Logo Pullers' Oh Dear.... All this talking, and very little coding... Still I'm getting paid. (What do you mean I'm not?)

It's VERY important to have all your idea's and graphics lined up before you start coding, as it makes the job MUCH, MUCH easier... The times I've had to re-write a program from scratch just to make a small alteration that refused to be altered! A good source of idea's and inspiration are 'Fantasy Art' books, some of them are so damn wierd that idea's just spring to mind without you realising it. Great Stuff! Other good sources are magazines (Computer and Non-Computer) and of course TV and Video provides a lot of idea's (Unfortunately, conversions also spring up from this media

Day 9....Guilt got the better of me today and I sat down to code some routines. I Stamped on some Rasters until they gave in and let me put sprites on them without flicking. Hehe... This was for a part with some raster borders, and a sprite movement routine over the whole screen. I really hate it when a good screen is spoilt by people being too lazy to spend time getting rasters rock solid... It doesn't take much time and gives a much better impression

Tied up the intro, and put a few more colour change routines in for the scroll. Re-wrote Bizzmo's routines to animate the Flame Logo, so they would co-operate with some other idea's I had in mind. Had a drink, went to bed, noticed it was 3:07am. Oops.

Deeks music also appears to have got lost in the post. Right. No more Royal Mail for this project. BT Rules! It gets things there (If Expensively)

Day 10....Done a LOT of coding today for a menu system CDU have asked me to do, its more involved than the old 'Press A-Z for your program'. You get Information, music, and more to look at as well... Whoopee Doo!

Phoned Bizzmo to order the graphics for it, a 3x2 font and a long logo. Had a small problem switching ALL the interrupts, rasters, music off before loading... But on searching I found three JSR's that solve this problem quite well (And quite Smoothly...!)

Day 11....Bizzmo did most of the graphics over the weekend, so today saw a three hour phone conversation/code swapping session. I sent him the work I'd done for him to look at, and he sent me his graphics which I chucked in to test. It's looking cool...!

Looked through a few demo's this evening, they didn't really give me many idea's. 'Things tend to look much better with good graphics' is the only conclusion I came to. Good ol' Bizzmo....

Day 12....Finished off the menu system today, got the remaining graphics from Bizzmo and included them. Phoned Paul (CDU's Editor) who's had a rather depressing week (Hope your feeling better mate...) and got told that this episode of the diary has to be finished

by the 1st of September... (I think I'm going to commit Hari-Karill).

The good news is that you should see the menu system included in this issue, unless any bugs turn up... [And they better not, matey, or Silicon will flow....]

Day 13....Linked the Menu system together and used a few demo's to see if it was loading things correctly, no problems so far. One problem I did have was that if a filename wasn't found, the menu crashed. A couple of alterations later, the program crashes out into itself, so avoiding any problems.

Day 14....Looked through another new batch of Amiga demo's today, keeping a pen and paper handy to scribble idea's down with. One thing common on the Amiga is the use of two white lines, one above and one below a section of the demo (i.e. A picture or a scroll) This gives a nice 'Beginning and Ending' of a section. Must bare that in mind, I usually put a colour bar above and below a picture to round it off, but I think a white bar looks better.

Day 15....Final Diary entry this episode! Next time I will get down to the main coding of the demo, so a lot more programming idea's will come your way, rather than the designing idea's I have mainly included in this issue!

If anyone has any idea's, suggestions, or anything else then drop me a line at this address **Andy - 17 Well Close, Northway, Tewkesbury, Glos. GL20 8RS** - (I like swapping House & Mix tapes) See you all soon now!

CITADEL

While exploring outworld colonies near ATENAPOL (just off the coast of Wales) a faint energy emission has been picked up. A probe picked up the faint energy reading. Hmm... it thought to itself... that planet was assumed lifeless! Further exploration reveals an underground complex devoid of human life, with operational power systems... Left on? Or turned on? Who knows.

Being a very cautious chap, you sit comfortably in your control centre and send out a remote device to take all the hostility and abusive language within the deep city complexes. Called MONITOR, the device has a built in mini-screen to show energy levels of captured objects and other such information. The cities themselves are very varied, some polished, some dark and most of them depressing... Each one has lifts, walls, and most importantly... TRAPS! Traps are either nasty or nice, and they open themselves when you get too close. When they open they can contain switches, energy, extra weapons, gun turrets or aliens. Pressing fire twice quickly gives you a capture probe which you can move about and lock onto targets. Aliens can be grabbed for use and so on... Once the exit to each city is found, you can move onto the next one until all 8 are completed. When (if it's hard...) all 8 are completed you get a quick text screen (Grrrr... after 'The

hunter returns to Hunters Moon' I expected a bit more) you restart at the beginning, but a little bit harder.

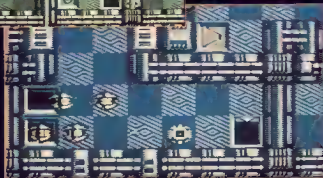
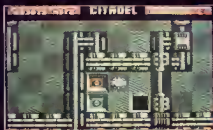
The Graphics are great, smooth shading and animations are amazing everywhere. I particularly like the opening of the traps. Aliens all look very metal and new, and work together well with the city graphics. Music... Hmm... A bit TOO much like the music in *Annalyle*, but nevertheless atmospheric and fitting. Sound effects are by far the most catching aspect, beating pulp out of most things I've heard before. Each City has its own 'Hummm...' and the priority routine makes sure you hear yourself blowing up rather than anything else. (Is that good? Ed.) The gameplay I can't really fault. 'Chess-board' movement takes a game or two to get used to, but once mastered makes the game more strategical as

well as the blasting. Great idea Mr Walker!

Even if you complete all cities, there is STILL a random trap feature that will do your head in! A brilliant concept, and great programming.

City Levels and Features:

- 1) Alien - First Encounters of the bad kind!
- 2) Armour - Vicious Guardians...
- 3) Brass - Where the missiles are intelligent
- 4) Chamber - A nightmare maze.
- 5) Arena - A massive array of grim defences.
- 6) Void - Where attack comes from anywhere.
- 7) Hazard - Nice graflix, and DESTROYERS.
- 8) Gothic - Where nothing is as it seems.



At a Glance

Title: Citadel
Supplier: Electric Dreams
Price: Cassette £9.99, Disk £14.99
Graphics: Very polished
Music: Atmospheric, but like *Annalyle*
Addictiveness: Yes!

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